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TABLE OF CONTENTS

PAGE

1. A. J. B. Wace and Others. Mycenae, 1939–1952 (*Plates* 1–28) 3
2. A. Furness. The Neolithic Pottery of Knossos (*Plates* 29–32) 94
3. N. G. L. Hammond. Hellenic Houses at Ammótopos in Epirus (*Plates* 33–34) . . 135
4. D. Nicol. The Churches of Molyvdoskepastos (*Plate* 35) 141
5. J. K. Anderson. Excavations near Mamousia in Achaia (*Plates* 36–38) 154
6. T. J. Dunbabin and M. Robertson. Some Protocorinthian Vase-Painters . . . 172
7. H. J. W. Tillyard. The Byzantine Modes in the Twelfth Century 182
8. A. G. Woodhead. A Political Sherd (*Plate* 39) 191
9. R. J. Hopper. The Attic Silver Mines in the Fourth Century B.C. 200
10. S. Benton. Further Excavations at Aetos (with an Appendix on The Later Corinthian Pottery from Aetos by J. K. Anderson) (*Plates* 40–70) 255

Index 363

FIGURES IN THE TEXT

PAGE

MYCENAE 1939–1952.

PART I. PRELIMINARY REPORT ON THE EXCAVATIONS OF 1952.

Fig. 1. Mycenae: Area North-west of Acropolis 2
Fig. 2. Mycenae: The House of the Oil Merchant, Plan 10
Fig. 3. Mycenae: The House of the Oil Merchant, Section at Fig. 2, A . . . 11
Fig. 4. Mycenae: The House of the Oil Merchant, Section at Fig. 2, B . . . 11

PART II. THE PERSEIA FOUNTAIN HOUSE.

Fig. 5. Mycenae: Boundary Stone from the Perseia Fountain House 28

PART III. THE AGAMEMNONEION.

Fig. 6. Mycenae: Agamemnoneion, Section through Central Area, A–A . . . 31
Fig. 7. Mycenae: Agamemnoneion 31
Figs. 8–13. Late Geometric Pottery . . . . 35–39 & 41
Fig. 14. Subgeometric Krater 41
Fig. 15. Subgeometric Kraters 43
Fig. 16. Archaic Glazed Kraters 43
Fig. 17. Archaic Glazed Kantharos 44
Fig. 18. Archaic Glazed Kantharoi 45
Fig. 19. Archaic Glazed Cups 46
Fig. 20. Archaic Glazed Cups and Bowl 47
Fig. 21. Archaic Glazed Kalathoi 47
Fig. 22. Archaic Glazed Protome-bowl and Pyxis 48
Fig. 23. Argive Miniature Vases 49
Fig. 24. Argive Miniature Table 49
Fig. 25. Protocorinthian Kotyle 50
Fig. 26. Protocorinthian Kotyle Fragments and Corinthian Alabastron . . . 52
Fig. 27. Corinthian Vases 53
Fig. 28. Corinthian Kotyle Fragments 54
Fig. 29. Corinthian Oenochoe Fragment 55
Fig. 30*a*. Early Black Figure Krater 56
Fig. 30*b*. Early Black Figure Krater 56
Fig. 31. Black Figure Cup Fragments 57
Fig. 32. Attic Black-glazed Vases 59
Fig. 33. Argive Black-glazed Vases 60
Fig. 34. Miscellaneous Vases 61
Fig. 35. Terracotta Plaque 61
Fig. 36. Terracotta Figurines 63
Fig. 37. Terracotta Mule 65

PAGE
Fig. 38. Inscriptions on Vases 65
Fig. 39. Section of Tile 66
Fig. 40. Inscriptions on Tiles 67
Fig. 41. Metal Objects 68

PART IV. THE EPANO PHOURNOS THOLOS TOMB.

Fig. 42. Plan and Section 70
Fig. 43. Fragments of Palace Style Amphorae 74
Fig. 44. Fragments of Palace Style Amphorae 76
Fig. 45. (1–6) *Gold*, (7–9) *Bronze*, (10) *Amber bead*, (11) *Paste bead*, (12) *Clay spool*, (13) *Strainer spout*, (14) *Terracotta head* 78
Fig. 46. Bronze Javelin Head 79

PART V. A MYCENAEAN CAVALRYMAN.

Fig. 47. Mycenae. Terracotta Horseman (Front Legs of Horse Restored) . . . 85
Fig. 48. Mycenae. Terracotta Horseman 85

THE NEOLITHIC POTTERY OF KNOSSOS.

Fig. 1. Distribution of E.N. Finds on the Knossos Mound 101
Fig. 2. Distribution of M.N. Finds on the Knossos Mound 101
Fig. 3. Distribution of L.N. Finds on the Knossos Mound 102
Fig. 4. Coarse Ware Bowls, E.N. and Later 104
Fig. 5. Coarse Ware Jars and Bases, E.N. and Later 106
Fig. 5*a*. Wishbone Handles 107
Fig. 5*b*. Strap Handles and Lugs 107
Fig. 5*c*. Spouts, Ladles, Handles, etc., of Various Dates 109
Fig. 6. Fine Ware Bowls, E.N. and Later 111
Fig. 7. Fine Ware Bowls and Jars, E.N. 113
Fig. 8. Fine Ware Jars and Bases, E.N. and Later 113
Fig. 9. Trumpeted Handles and Incised Bowls, E.N. I 116
Fig. 9*a*. Incised Bowl in Iraklion Museum 118
Fig. 10. Incised Bowls, E.N. II 119
Fig. 11. Coarse Ware Bowls and Jars, M.N. and L.N. 122
Fig. 12. Bowls, Bases, Miniature Vessels, etc., M.N. 124
Fig. 13. (*a*) Incised Bowls and Jars, M.N. (*b*) L.N. Decorated Sherds and a Reconstruction of One of the Legged Receptacles 127
Fig. 14. Bowls, Jars, and Miniature Vessels, L.N. 130
Fig. 15. Raised Bases, E.N.–L.N. 130
Fig. 16. ‘ Fruit Stands ’ and Bowls, E.M. 130

HELLENIC HOUSES AT AMMÓTOPOS IN EPIRUS.

Fig. 1. Looking South from the Site at Ammótopos 135
Figs. 2–4. (2) Site at Ammótopos. (3) Ground Plan of House A. (4) House A. Window in West Wall 137

PAGE

THE CHURCHES OF MOLYVDOSKEPASTOS.

Fig. 1. Monastery Church of the Dormition of the Virgin, Molyvdoskepastos. (*a*) From S.E. (*b*) From S. 142
Fig. 2. Monastery Church of the Dormition, Molyvdoskepastos. Plan . . . 143
Fig. 3. Church of St. Demetrios, Molyvdoskepastos. Plan 147
Fig. 4. Church of the Holy Apostles, Molyvdoskepastos. Plan 148
Figs. 5–8. Molyvdoskepastos. 5. Church of the Holy Apostles. Inscriptions Relating to Restorations. 6. N. Gable Window of the Church. 7 and 8. Inscription over Apse, and Plan of Church of the Dormition 149
Fig. 9. Church of the Holy Trinity, Molyvdoskepastos. Plan and East Front . . 151

EXCAVATIONS NEAR MAMOUSIA IN ACHAIA.

Fig. 1. Plan and Sections of the House near Mamousia 155
Fig. 2. Small Plates, Bowls, etc. 159
Fig. 3. Bowls with Relief Decoration 160
Fig. 4. Grey and Red-glazed Ware 161
Fig. 5. Lamps, Cooking Pots and Amphora 162
Fig. 6. Cake Stamp 164
Fig. 7. (*a*), (*b*) Metal Objects. (*c*) The Bath from the West 166

SOME PROTOCORINTHIAN VASE-PAINTERS.

Aryballos, Oxford 1935, 41 175

THE BYZANTINE MODES IN THE TWELFTH CENTURY.

Figs. 1–25. Signatures of the Byzantine Modes. 26–27, The Ison 183

A POLITICAL SHERD.

Fig. 1. Fish-plate in the Museum of Classical Archaeology, Cambridge . . . 191
Fig. 2. Profile of Inscribed Sherd 192

FURTHER EXCAVATIONS AT AETOS.

Fig. 1. Combined Plans 256
Fig. 2. Plan of Further Excavations 258
Fig. 3. Sections of Mycenaean Vases 267
Fig. 4. Sections of Protogeometric Vases 267
Fig. 5. Protogeometric Patterns 268
Fig. 6. Protogeometric Sherds 269
Fig. 7. Cups 273
Fig. 8. Cups, etc. 275
Fig. 9. Kantharoi, Pyxides, etc. 280
Fig. 10. Kotylai, etc. 282
Fig. 11. Kantharoi 289

PAGE
Fig. 12. Sections of Vases 293
Fig. 13. Lid, Plate and Sections 305
Fig. 14. Patterns of Ithacan Vases 305
Fig. 15. Oinochoai 308
Fig. 16. Vase and Lid 310
Fig. 17. Kotyle 695 312
Fig. 18. Sherds from Kotylai 316
Fig. 19. Oinochoai and an Aryballos 319
Fig. 20. Vases 321
Fig. 21. Pyxis 827 322
Fig. 22. Pyxis and Local Oinochoe 324
Fig. 23. Oinochoai 326
Fig. 24. ‘ Jazz ’ and Geometric Patterns 330
Fig. 25. Geometric Oinochoe 923 332
Fig. 26. Orientalising Patterns 332
Fig. 27. Oinochoai 927 and 948 332
Fig. 28. Oinochoai and a Lid 334
Fig. 29. Oinochoai 335
Fig. 30. Conical Oinochoe 1018 336
Fig. 31. Seventh-century Patterns 337
Fig. 32. Plates and Other Vases 339
Fig. 33. A Plate, and Oinochoe Patterns 342
Fig. 34. Orientalising Patterns 344
Fig. 35. Iron Objects 355
Fig. 36. Bronzes and a Seal 357
Fig. 37. ‘ Corinthian ’ Lid K.7 359
Fig. 38. LPC/Trans. Oinochoe 360
Fig. 39. ‘ Corinthian ’ Oinochoe 360
Fig. 40. Running Dogs from Ovoid Aryballoi 360

LIST OF PLATES

MYCENAE 1939–1952.

PART I. PRELIMINARY REPORT ON THE EXCAVATIONS OF 1952.

1. Prehistoric Cemetery. (*a*) Alabastron L.H. II.
   Poros Wall. (*b*) Chariot Vase. (*c*) Askos L.H. IIIB. (*d*) Stirrup Jar L.H. IIIB.
   House of Oil Merchant. (*e*) Spouted Bowl L.H. IIIB.
2. Poros Wall, Group of Bronzes. (*a*) Ingot Fragments and Lump of Melted Metal. (*b*) Knives. (*c*) Chisels, Adze, Hammer, Drill, Double Axe. (*d*) Dagger. (*e*) Handle of Cauldron.
3. Prehistoric Cemetery. (*a*) Grave XXV. (*b*) Grave XXVII. (*c*) Grave XXVIII, before opening. (*d*) Grave XXVIII, open.
4. Prehistoric Cemetery. (*a*) Model Figure-of-Eight Shields in Ivory. (*b*) Ivory Sceptre(?). (*c*) Handle of Silver Cup inlaid with Gold and Niello.
   House of Shields. (*d*) Model Figure-of-Eight Shield in Ivory.
5. Prehistoric Cemetery. Ivory Plaque.
6. House of Oil Merchant. (*a*) General View from North-east. (*b*) Room 1 from North-west. (*c*) South Side of Entrance to Room 3. (*d*) Room 4 from East.
7. House of Oil Merchant. Stoppered Stirrup Jars.
8. Poros Wall. (*a*) Inscribed Stirrup Jar L.H. IIIB.
   House of Oil Merchant. (*b*) Room 4, Stirrup Jar L.H. IIIB. (*d*) Room 4, Ladle L.H. IIIB. (*e*) Below Room 5, Cup L.H. IIIA.
   House of Wine Merchant. (*c*) Stirrup Jar L.H. IIIB.
9. House of Oil Merchant. (*a*) Fresco below Floor at South End of Main Corridor. (*b*) Room 5, Sandstone Mould for Winged Axe. (*d*) Main Corridor (North End), Sealed Caps of Stirrup Jars.
   House of Sphinxes. (*c*) Storeroom, Ivory Plaque.
10. House of Wine Merchant. (*a*) Pithos. (*b*) Stirrup Jars and Pithoi as found.
    Prehistoric Cemetery. (*c*) Hellenistic Grave.
    Poros Wall. (*d*) Face from East.
11. House of Wine Merchant. (*a*) Stirrup Jar. (*b*) Rhyton L.H. IIIA. (*c*) Stirrup Jar. (*d*) Stone and Pottery Caps.

PART II. THE PERSEIA FOUNTAIN HOUSE.

12. Plan of Perseia Fountain House.
13. (*a*) Perseia Fountain House, Sections through Plan. (*b*) Agamemnoneion, Plan of Excavation.
14. Perseia Fountain House. (*a*) View from West. (*b*) Inscribed Poros Base, found by Tsountas.
15. Perseia Fountain House. (*a*) View from West with Water Channel. (*b*) View from North-east.
16. Perseia Fountain House. (*a*) North-west Corner of Basin A. (*b*) Abutment of West End of Main Wall against Curved Wall.

PART III. THE AGAMEMNONEION.

17. *Left*, Geometric Pottery. *Right*, Early B.F. Fragment.
18. *Above*, Geometric Pottery. *Below*, Protocorinthian Sherds.
19. Subgeometric Krateriskoi and Archaic Glazed Ware.
20. Argive Miniature and Corinthian Vases.
21. Corinthian Pottery and B.F. Skyphoi.
22. Various Sherds and Terracottas.
23. Terracotta Figurines.

PART IV. THE EPANO PHOURNOS THOLOS TOMB.

24. Entrance.
25. Palace Style Amphorae (Nos. 2 and 3).
26. Palace Style Amphorae (Nos. 4 and 6).
27. (*a–b*) Palace Style Amphorae (Nos. 5, 7, 9). (*c*) Head of Terracotta Warrior (No. 30).
28. (*a*) Fragment of Jug or Amphora (No. 12). (*b*) Palace Style Amphora (No. 1). (*c–d*) Post-Mycenaean Pottery.

THE NEOLITHIC POTTERY OF KNOSSOS.

29. (*a*) Strap Handles and Lugs. (*b*) E.N. I Sherds with Plastic Ornament.
30. (*a*) *Pointillé* Incision and Plastic Ornament. (*b*) *Pointillé* Incised Ornament. (*c*) E.N. I Bowl Incised in *Pointillé* Style.
31. (*a*) Incised Sherds, E.N. II and Later. (*b*) Pellet Ornament, Pattern Burnish, Grooving, Rippling, etc.
32. (*a*) L.N. Sherds from Beneath the Central Court. (*b*) L.N. Handles and Decorated Pieces.

HELLENIC HOUSES AT AMMÓTOPOS IN EPIRUS.

33. House A. (*a*) South and West Walls from Inside. (*b*) South Wall from Outside. (*c*) West Wall from Outside.
34. (*a*) Houses B and C. (*b*) House D and Buildings. (*c*) House D. East and South Walls from Inside.

THE CHURCHES OF MOLYVDOSKEPASTOS.

35. (*a*), (*c*), (*d*) Church of the Holy Apostles. (*a*) From the East. (*c*) Inscription over West Door of Nave. (*d*) Portraits of Benefactors. (*b*) Church of St. Demetrios. Apse.

EXCAVATIONS NEAR MAMOUSIA IN ACHAIA.

36. (*a*) The Bathroom from the South. (*b*) The Bath from the South. (*c*) The Bathroom from the South-west.
37. (*a*), (*b*) Storeroom from East and South-west. (*c*) Fragments of Decorated Pottery. (*d*) Cake Stamps and Stamp Purchased Locally.
38. Bronze Handles.

A POLITICAL SHERD.

39. (*a*) Upper Surface; (*b*) Dedication on Rim.

FURTHER EXCAVATIONS AT AETOS.

40. Walls of Shrine and Agora at Aetos, Ithaca.
41. Cups from Aetos, Ithaca.
42. Kotylai from Aetos, Ithaca.
43. Kotylai from Aetos, Ithaca.
44. Vases from Aetos, Ithaca.
45. Kantharoi from Aetos, Ithaca.
46. Geometric Kantharoi from Aetos, Ithaca.
47. Kantharoi from Aetos, Ithaca.
48. Kraters from Aetos, Ithaca.
49. Kraters from Aetos, Ithaca.
50. Pyxides from Aetos, Ithaca.
51. Lids, etc., from Aetos, Ithaca.
52. Closed Geometric Vases from Aetos, Ithaca.
53. Hydriai and Amphora from Aetos, Ithaca.
54. Geometric Oinochoai from Aetos, Ithaca.
55. Closed Vases from Aetos, Ithaca.
56. Oinochoai from Aetos, Ithaca.
57. Closed Vases from Aetos, Ithaca.
58. Closed Vases from Aetos, Ithaca.
59. Closed Vases from Aetos, Ithaca.
60. Local Tall-necked Oinochoai from Aetos, Ithaca.
61. Conical Oinochoe (1023), from Aetos, Ithaca.
62. Plates, etc., from Aetos, Ithaca.
63. Ivory and Bone from Aetos, Ithaca.
64. Terracotta Altar and Small Finds from Aetos, Ithaca.
65. Bronze Horses from Aetos, Ithaca.
66. Bronzes from Aetos, Ithaca.
67. Beads from Aetos, Ithaca.
68. Ivories, etc., from Aetos, Ithaca.
69. Bronzes from Aetos, Ithaca.
70. ‘ Corinthian ’ Pottery from Aetos, Ithaca.

MYCENAE 1939–1952

PAGE

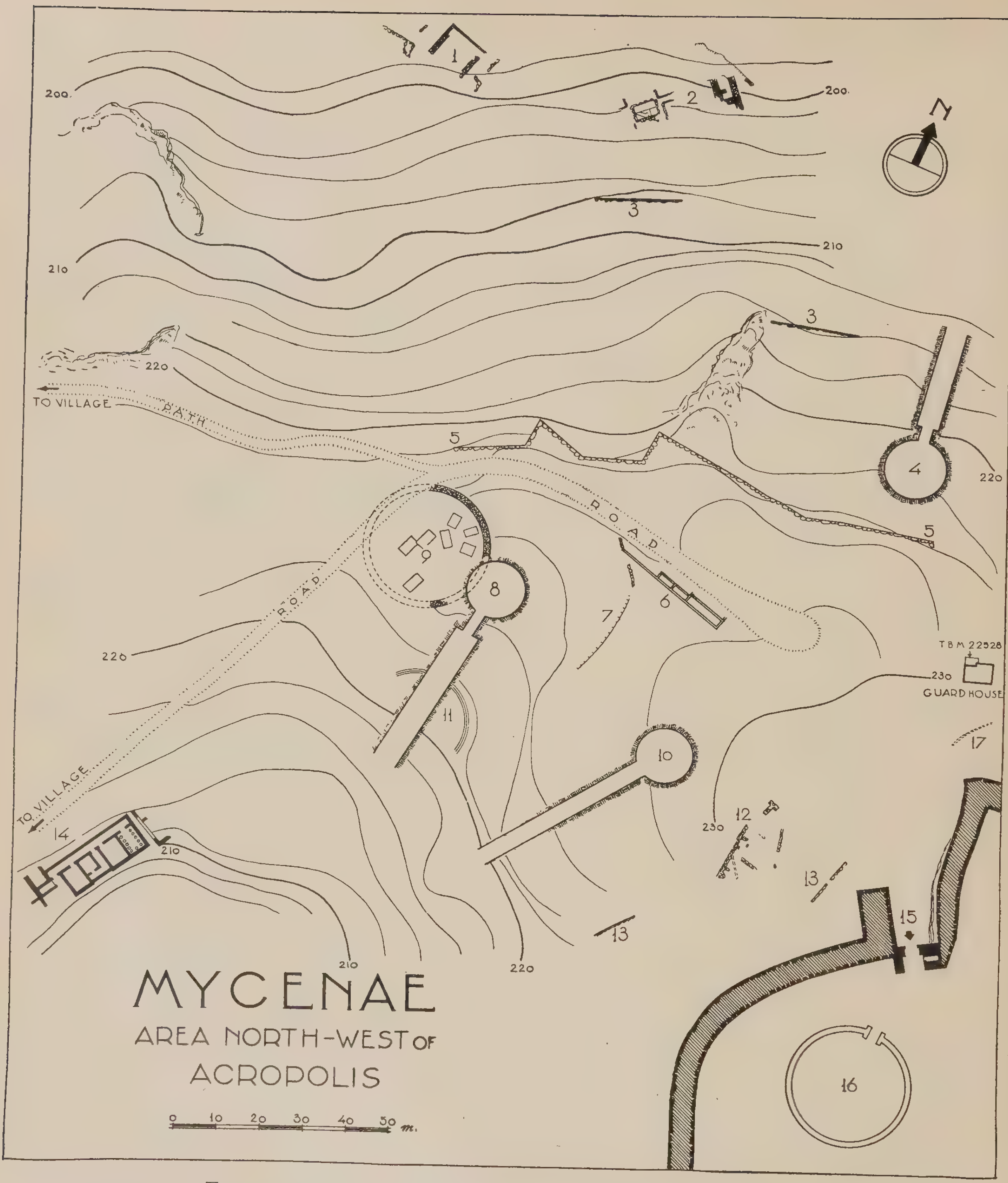
Part I. Preliminary Report on the Excavations of 1952 3
By A. J. B. Wace.

Part II. The Perseia Fountain House 19
By Marian Holland and M. S. F. Hood, with a Note on the Boundary Stone by A. G. Woodhead.

Part III. The Agamemnoneion 30
By J. M. Cook.

Part IV. The Epano Phournos Tholos Tomb 69
By A. J. B. Wace and M. S. F. Hood, with a Note on the post-Mycenaean Pottery by J. M. Cook.

Part V. A Mycenaean Cavalryman 84
By M. S. F. Hood.


MYCENAE
AREA NORTH-WEST OF ACROPOLIS
0 10 20 30 40 50 m.
TO VILLAGE
PATH
ROAD
ROAD
TO VILLAGE
TBM 22528
GUARD HOUSE
200
200
210
210
220
220
220
230
230
210
210
220
1
2
3
3
4
5
5
6
7
8
9
10
11
12
13
13
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16
17

FIG. 1.—MYCENAE: AREA NORTH-WEST OF ACROPOLIS.

1. Cyclopean Terrace Building (House of Wine Merchant).
2. Petsas' House.
3. Hellenistic Terrace Walls.
4. Lion Tomb.
5. Lower Town Wall, Hellenistic.
6. Perseia Fountain House.
7. Poros Wall.
8. Tomb of Clytemnestra.
9. Middle Helladic Grave Circle.
10. Tomb of Aegisthus.
11. Theatre, Hellenistic.
12. Prehistoric Cemetery, M.H. to L.H. II.
13. Mycenaean Terrace Walls.
14. House of Oil Merchant.
15. Lion Gate.
16. Late Helladic I Grave Circle (Schliemann).
17. Water Channel.

PART I. PRELIMINARY REPORT ON THE EXCAVATIONS OF 1952

(PLATES 1–11)

1. Introduction

The British excavations at Mycenae[1] in 1952 were conducted with a research grant from the American Philosophical Society assisted by contributions from the Universities of Cambridge and Oxford, the British Academy, the Leverhulme Trustees, and the British School at Athens under whose aegis the work was carried out.

The excavations began on June 30th, and all active digging ceased on August 18th, though several days were needed to clear up everything and transport the finds to the National Museum in Athens and the Nauplia Museum. Of the finds the bronzes, the ivories, the inscribed tablets, and some pottery wanted for special study were taken to Athens and everything else taken to Nauplia and placed in a separate room. Of the pottery the archaic and classical pottery and the terracotta figurines from the sanctuary by the Causeway, from the excavations of 1950 and 1952, and most of the classical and Hellenistic fragments from the Perseia Fountain House are now in Athens. All the prehistoric pottery except for a few select pieces is in the Nauplia Museum.

The staff of the excavation in addition to my wife and myself comprised Dr. F. H. Stubbings, Fellow of Emmanuel College, Cambridge; Mr. Sinclair Hood, late Assistant Director of the British School; Lord William Taylour of Trinity College, Cambridge; Miss Margaret Dow and Miss Elizabeth Wace of Newnham College, Cambridge; Mr. Alan Hunter of Brasenose College, Oxford; Mr. George Huxley of Magdalen College, Oxford. Miss Marian Holland of Bryn Mawr College and Columbia University was architect, and Mr. David Smollett was surveyor. Mr. Bernard Kreeger and Mr. Neville Chittick also gave valuable help with the plans after the departure of Miss Holland and Mr. Smollett. Mr. Roger Waterfield of King's College, Cambridge, and Mr. Robin Moore assisted for short periods. The American School gave us much valuable help especially by the loan of a theodolite, and the Agora Excavations generously supplied some necessary equipment for the architects and draughtsmen. Our best thanks are due to Mr. J. L. Caskey and to Professor Homer Thompson. Miss Alison Frantz of the Agora took many photographs for us, especially of the tablets, ivories, and bronzes, and also gave us much useful advice. On the site Miss Dow and Miss Wace took charge of the photographic work with great success. Mr. N. Tombazis of Athens also took for us several good photographs of the excavations and finds.

The British School lent tools and equipment, and the Secretary of the School, Mrs. Rabnett, efficiently smoothed all administrative and financial matters in Athens for us. Orestes Dases was foreman, and Arghyris Marinos proved as usual a skilful mender and technician.

The Greek Ministry of Education most readily renewed the permit for the excavations, and was ably represented by Dr. I. Papademetriou, who was at the same time conducting his important excavations in the new Middle Helladic Grave Circle immediately to the west of the 'Tomb of Clytemnestra'. With his usual courtesy he gave us much friendly help and cordial collaboration. The Nomarch of Argolis, Mr. Antonios Svokos, took a keen interest in our work and befriended us in many ways. On July 22nd Their Majesties the King and Queen of Greece visited Mycenae and inspected our excavations and discoveries in which they took the most lively interest.

---

[1] The manuscript of this report has been read by Dr. Stubbings, by Miss Dow, and by my wife and daughter, and has been much improved by their criticisms. The responsibility for it, however, remains mine. It was prepared in the autumn of 1952 while I was a member of the Institute for Advanced Study at Princeton. My best thanks are due to Mr. John Travlos, Professor R. Stillwell, and Mrs. Evelyn Smithson for kind help with the plans.

The principal objectives of the campaign were the following: the making of a new survey of the ridge running westwards from the Lion Gate, further investigation of the Prehistoric Cemetery discovered outside the Lion Gate to the west in 1939 and 1950, thorough re-examination of the ruins by the side of the modern carriage road once tentatively called a Hellenistic Gymnasium, the clearing of the House of the Oil Merchant (found in 1950 and formerly called the House of Stirrup Jars) and of the House of the Wine Merchant (found in 1951 and part of the Cyclopean Terrace Building), exploration of a site on the land of Mr. Tsekouras near the Neromana (Perseia) spring where it was thought possible that an ancient potter's kiln might have existed.

2. The Survey

Steffen's admirable plan of Mycenae and the region around it is not sufficiently large for detailed field work, and the number of monuments now known on the ridge immediately west of the Lion Gate is great for a plan on so small a scale. Consequently, as stated, one of the main objects of the campaign was to prepare a new survey of the whole of this area and indicate on it not only the monuments previously known like 'The Tomb of Clytemnestra', but also recently discovered sites like the new Middle Helladic Grave Circle now being excavated by Dr. Papademetriou and the large and important houses which recent discoveries have shown to be a prominent feature of this area. The survey was carried out by Mr. David Smollett, and a provisional publication of his work is to be seen on FIG. 1. It is hoped in the next campaign to add more details to this map. As it is, however, we hope that it will provide for all those interested a satisfactory idea of this important section of Mycenae.

In this region the exploration of two areas occupied by private houses has now been begun. The first is that immediately to the south of the L.H. III tholos tomb called 'The Tomb of Clytemnestra', where the clearing of the House of the Oil Merchant (FIG. 1, 14) found in 1950 has resulted in the discovery of inscribed clay tablets, the first to be found at Mycenae, except for a surface find in 1950,[2] and the first to be found in the Aegean area in a purely private house. The second area lies at the northern foot of the ridge, and here the excavation of two important buildings has begun. The Greek Archaeological Society under Dr. Papademetriou and Mr. Petsas has begun the excavation of a large house (FIG. 1, 2) to the north-west of the Lion Tomb, and in it has discovered storerooms filled with a stock of unused painted vases and other interesting finds.[3] Farther to the west we have continued the exploration of the Cyclopean Terrace Building first examined in 1923,[4] and the results will be given in Section 7 of this report (FIG. 1, 1). From this we now recognise that there were important residential quarters by the side of the roads leading up to the Lion Gate and the Citadel. There must presumably have been a road mounting to the Lion Gate from the houses built on terraces on the northern slope, but no indications as to its line are yet available. At the top of the northern slope the line of the Hellenistic lower town wall is indicated, and below it farther down the slope some Hellenistic terrace walls of unknown purpose.

When we regard the south side of the ridge with the House of the Oil Merchant and another house (not yet excavated and standing on another Cyclopean terrace wall immediately to the north) the problem of the course of a road approaching the Lion Gate at once arises. It seems likely that the ancient road did not follow the line of the modern carriage road, which incidentally impinges upon the western part of the House of the Oil Merchant as well as upon the western edge of the new Middle Helladic Grave Circle. More probably it ran below the east front of the terrace wall on which the Oil Merchant's house stands (FIG. 1, 14) and then passed in front of the entrance of the dromos of the ' Tomb of Clytemnestra ' and of the dromos of the ' Tomb of Aegisthus ' and then turned north-eastwards and climbed the slope in a series of zigzags making use of the Mycenaean terrace walls here visible (FIG. 1, 13). This would have brought the roadway directly below the west side of the great bastion which is thrown out on the west of the Lion Gate and so ensured that any enemies trying to approach the gate would be obliged to turn their right or shieldless sides towards the bastion. This was a standard and well-known principle of Greek fortification, and such a climbing zigzag road would have paralleled the approach to the Acropolis at Athens below the Nike pyrgos.[5]

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[2] *PAE* 1950, 215, fig. 18.

[3] *PAE* 1950, 203–33.

[4] *BSA* XXV 403 ff.

The Prehistoric Cemetery of M.H. and L.H. I and L.H. II would have extended along the backbone of the ridge westwards from the front of the Lion Gate at least as far as the new M.H. Grave Circle (FIG. 1, 9) now being excavated by Dr. Papademetriou, which in all probability was shown to Pausanias as the traditional site of the graves of Clytemnestra and Aegisthus. The eastern limits of the Prehistoric Cemetery lie within the Cyclopean walls and include not only the L.H. I Grave Circle found by Schliemann, but also the area of the Granary, the Ramp House, the South House, and the House of the Warrior Vase. Also the Prehistoric Cemetery before the western front of the citadel of Mycenae was spread over a wide area. In or near it were built three tholos tombs, those called ' The Lion Tomb ', ' The Tomb of Clytemnestra ', and ' The Tomb of Aegisthus '. Further, Dr. Papademetriou has found a rock-cut chamber tomb immediately against the southern circumference of the M.H. Grave Circle. The Prehistoric Cemetery seems to have been large and scattered, but all the tombs within it except probably the tholos called 'The Tomb of Clytemnestra ' are earlier than the Lion Gate and the Cyclopean Walls.

Of post-Mycenaean monuments the most important yet discovered in this area is the Perseia Fountain House (FIG. 1, 6), once tentatively called a Hellenistic Gymnasium, but now definitely identified in the campaign of 1952. This lies not far from the inner or southern face of the Hellenistic lower town wall, and seems to have been approached from the north, although we might think that an approach so near the defensive wall would be inconvenient and that we might rather expect the Perseia Fountain House to have been approached by a road or path running along the top of the ridge.

3. The Perseia Fountain House

This is discussed and described in Part II of this Report by Miss Marian Holland and Mr. Sinclair Hood, together with a note on the boundary stone by Mr. A. G. Woodhead.

4. The Poros Wall

South of the Perseia Fountain House (FIG. 1, 6) and midway between the tholos tombs known as ' The Tomb of Aegisthus ' and ' The Tomb of Clytemnestra ' we found a well-built wall faced with poros blocks carefully cut and laid. This wall (FIG. 1, 7) runs up the slope of the ridge from south to north, and at its northern end seems almost to join the southernmost point of the curved wall which runs southward at the western end of the main terrace wall of the Perseia Fountain House (FIG. 1, 6). It does not actually join, however, and the two walls might be separate, and another wall runs off eastwards at right angles to the poros wall at its northernmost end. This wall (not indicated on the plan) is differently built. It is made of small stones packed together with the usual yellowish clay which was used as mortar by Mycenaeans and comes either from Longaki or Plesia. This cross-wall was found at the close of the excavations and there was not enough time to examine it properly. That will have to be done another season. The poros wall is built of small stones packed with yellow clay, and is about 1·20–1·30 m. thick. It is faced on the east with four courses of finely dressed poros blocks, which vary slightly in height from 0·35 to 0·40 m. As can be seen in the photograph (PLATE 10, *d*) they vary also in width, but their depth is on an average approximately equal to their height. They rest on a foundation of small stones roughly coursed, which in height equals about one row of the poros blocks. The total height of the wall is about two metres. At the level of the base of the lowest course of poros blocks there is a layer of whitish-yellow clay which seems to have extended along the face of the wall at this level and also for some distance in front of it. This was presumably the ground level at which the wall was built. The wall runs for about twenty metres as far as it has been possible to trace it at present, and its courses are not horizontal, but have an inclination from south to north as it follows the slope of the hill upwards. The poros blocks, especially where they are preserved to a good height at the north end, incline outwards, but this may be merely accidental due to pressure from behind. At the northern end the small stone foundation only is preserved, but several displaced poros blocks were found lying in front of the wall. Either stone robbers had plundered the wall for building stone or else, since the top of the wall at this point was not more than 0·20 m. below the surface, the blocks have been displaced in the course of ploughing. Against the southern part of the wall and by the third row of blocks from the top lay a human skeleton stretched at full length with the head to the south. Since no funeral offerings seem to have been buried with it, this was probably a late burial and had no connection with the wall.

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[5] Stevens, *Hesperia* XV (1946), 73 ff.

When the wall was first found it was not unnaturally thought to be one side wall of the dromos of a tholos tomb. Trials farther east to attempt to find a parallel wall have so far proved fruitless. Thus the purpose of this wall is still unexplained, and further excavation must be undertaken in this area to define its object and date. It is well built and of carefully cut poros and resembles the wall of ashlar poros across the entrance of the dromos of the 'Tomb of Clytemnestra' assigned to the late fourteenth century B.C. To the east of the wall at varying depths, but still all above the level of the lowest row of poros blocks, many vases were found. Several of these, for instance a fine askos (PLATE 1, *c*) and two mugs, are of undecorated or partially decorated fine pale yellow buff ware, and resemble vases found in Room 4 of the House of the Oil Merchant, which are dated by associated finds to L.H. IIIB. Outstanding vases found in this same region are a fine stirrup jar (PLATE 1, *d*), a large stirrup jar with a painted inscription in the Linear B script (PLATE 8, *a*), and a fragment of another, and the large fragment (about 0·32 m. high) of a chariot vase (PLATE 1, *a*) of local Mycenaean fabric of the powdery-surfaced and not of the harder, well-smoothed variety. The stirrup jars are probably L.H. IIIB, but the chariot vase might be even earlier. It is of good style, notably in the drawing of the horse's legs and in the absence of filling ornaments. The painting is executed in red picked out with white, all drawn on pale-buff slip. In all about seventy vases were found in this area. At the north end of the area just to the south of the modern aqueduct and north of the east–west cross wall we found about 0·20 m. below the surface a hoard of bronzes. These all lay in one heap as if they had been carried in a canvas bag which had perished long ago. The bronzes include a large double axe of the normal type, a small hammer which shows signs of considerable use, two chisels, a drill (?), an adze (PLATE 2, *c*), several curved knives (PLATE 2, *b*), the handle of a large cauldron (PLATE 2, *e*), a dagger with a horned hilt (PLATE 2, *d*) and a raised midrib engraved with lines. The group which was probably the stock in trade of a bronze worker also contained many pieces of sheet bronze, a lump of metal which appears to have been melted in a crucible, and a number of pieces from ingots (PLATE 2, *a*) of the usual hide shape.[6] These last were weighed, but their weights like their shapes are apparently fortuitous. There is nothing to suggest that they are integral fractions of a standard.

5. The Prehistoric Cemetery

Further excavation of the part of this cemetery lying to the west and north-west of the area excavated in 1939 [7] was undertaken in the hope of finding more graves (FIG. 1, 12). Several more Middle Helladic graves were in fact found, and they were numbered Nos. XXV to XXXIV. Numbers XXVI, XXX, XXXI, XXXII, XXXIII were simple, unenclosed, inhumation graves of children. Number XXV was an unenclosed grave of a young adult (PLATE 3, *a*). The skeleton lay on its left side in the usual contracted attitude with the head to the west. In front of the face was a small spouted stone vase of serpentine. Number XXVII was a small shaft grave about 1·15 m. long, 0·55 m. wide, and about 0·55 m. deep. The skeleton of a child was found in this grave at a depth of 0·20 m. from the top, and below this at a depth of about 0·45 m. was the skeleton of an adult lying on its left side with the head to the north (PLATE 3, *b*). At its feet were the bones of another skeleton obviously belonging to an earlier interment which had been collected at this the south end of the grave. Although no funeral offerings were found in it, this grave, which is possibly L.H. I, is interesting as proving that secondary interment was sometimes practised in ordinary private shaft graves of M.H. or L.H. I date, as well as in the large shaft graves of royal or important persons as shown in Schliemann's royal shaft graves and in those now being excavated by Dr. Papademetriou in the new Middle Helladic Grave Circle just west of the tholos tomb called the 'Tomb of Clytemnestra'.

Grave XXVIII was an unusual grave (PLATE 3, *c*, *d*). It was in a shallow, circular, rock-cut pit about 0·50 m. in diameter and 0·45 m. deep which was lined with stones and covered with a round slab of stone about 0·43 m. in diameter. Inside this was packed the skeleton of a child with which were three small beads, one of bone and two of glass.

Grave XXXIV was the burial of a small infant in a much broken vase of red brown undecorated ware.

In addition to these graves there were many fragments of good painted pottery which presumably came from graves of L.H. I or L.H. II date which had been plundered when the cemetery was abandoned on the building of the Lion Gate and Cyclopean Walls. Among these are a jar of L.H. I date with a rockwork spiral design with lines of added white on the neck and body, and a straight-sided alabastron of early L.H. II date with an ivy-leaf design on a dotted ground (PLATE 1, *a*). Other stray sherds include a probable neolithic fragment with horizontal ribbings which has similarities to the rainbow ware of Corinth, and an incised fragment of E.H. ware not unlike a piece found by Stamatakes in the Grave Circle.[8]

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[6] Seltman, *Athens, its History and Coinage* 4 f., figs. 3, 4. Compare Svoronos *JIAN* IX (1906), 153 ff., pls. II–V. See also Schaeffer, *Enkomi-Alasia* 27 ff.

[7] *BSA* XLV 204 ff.

[8] Wace, *Mycenae*, pl. 80 *r*.

More important than all these were the remains of the contents of what must have been a rich L.H. II tomb. Just north of the shallow pit found in 1939 (to the west of Grave X) [9] we came upon a group of remarkable ivories. These include four pieces carved in the round which resemble model figure-of-eight shields (PLATE 4, *a*). They are about 0·18 m. long and about 0·03 m. thick. Whether these were really intended as models of figure-of-eight shields is uncertain because their two sides are alike. With them was another yet larger object about 0·27 m. long, 0·10 m. wide, and 0·05 m. thick in solid ivory which must have been cut from an exceptional tusk (PLATE 4, *b*). This has at the bottom a tenon for insertion in a socket. Above this are two circles like a figure-of-eight shield, and the whole is surmounted by a disc which is pierced with a triangular hole. The object thus resembles a caduceus, and may have been a sceptre or a herald's staff. All these five objects were probably originally covered with gold leaf, for in the earth all around them was scattered a great amount of thin gold leaf. It is to be hoped that further study and comparison with other ivories from Mycenaean sites will help to elucidate their purpose. Another suggestion is that they may have been part of some piece of furniture, a bed or a chair.[10]

In the same place two pieces of a magnificent ivory plaque came to light (PLATE 5). The larger one is about 0·25 m. long and 0·075 m. high. The smaller one is about 0·125 m. long and 0·04 m. high. They are both complete on their edges, and the larger one shows the curve of the tusk from which it was cut. They fit together and must have formed part of a large composition made of such pieces and fastened, like these, by ivory pegs to a backing which was probably of wood. The composition, which must have been at least half a metre long and probably about 0·15 m. high, showed two standing griffins confronting one another. The large piece shows the greater part of the right-hand griffin from the knees to the neck with the lower part of the wings. The hind feet were on a separate piece which is lost, and the eagle-like head would also have been on a separate piece now lost. The smaller piece, which fits closely to the larger one, shows the front feet, two of the right-hand griffin and one of the left-hand griffin, which is otherwise entirely lost. There is a moulded border at the bottom. The griffin is carved in low relief with great sureness and delicacy. The drawing of the muscles of the body and legs is masterly, and would be called lifelike if griffins were not mythical. The attitude of the creature is dignified, and we can rightly consider this a Mycenaean masterpiece. At the base of the wings can be seen the spirals which are usually in this position on Mycenaean griffins. Comparison of this with the griffins of the fine pyxis from the Agora [11] shows a great difference in style and execution. Behind the right-hand griffin there is a moulded border and part of an uncertain subject, perhaps a bird preening its wings with its beak. Though much thin gold leaf was scattered freely in the earth all about these ivories, we cannot tell whether they were once so gilded. Probably they were not. The figure-of-eight shields apparently had no carved surfaces, and so could be gilded, but these plaques are delicately carved, so that the addition of thin gold leaf to the surface would have obscured much of the finer detail. In the area round these ivories were many pieces of Palace Style amphorae and Ephyraean cups.[12] Such vases are characteristic of L.H. II, and so we can perhaps date the plundered tomb from which these ivories came to L.H. II, the fifteenth century B.C. Where the tomb was we cannot yet tell, but it might have been the pit mentioned which was found empty in 1939 just to the west of Tomb X.[13]

Another interesting find in this area which may well have belonged to the same plundered tomb is a silver cup-handle of the Vaphio shape (about 0·055 m. long) inlaid with gold and *niello* (PLATE 4, *c*). Since the handle when found was covered with green corrosion, it is possible that like the silver bowl from Enkomi [14] it is made of silver alloyed with copper. As usual in Mycenaean metalwork and again as on the silver bowl from Enkomi, the gold was not inlaid direct into the silver, but apparently into *niello*, which was inlaid first in the silver. There are three bands round the barrel of the handle, and of these the upper and the lower seem to be of electrum, and only the middle band seems to be of gold. The upper and lower plates are bordered with narrow gold bands inlaid in *niello*, and in addition the upper flat plate has two gold rosettes similarly inlaid in it. Since the handle is so much adorned, the cup to which it belonged was probably also richly inlaid with golden patterns. At each end of the curved band at one end of the upper plate there are two small holes for rivets to attach the handle to the side of the cup. The handle is not made in one piece, but composed of at least three pieces, the barrel and the upper and lower plates.

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[9] *BSA* XLV 209, fig. 2.

[10] Compare Homer, *Odyssey* XIX 56.

[11] Shear, *Hesperia* IX (1940), 283 ff., figs. 27–29.

[12] *Illustrated London News*, Oct. 25, 1952, 683, figs. 11, 13.

[13] *BSA* XLV 209, fig. 2.

Immediately to the north of the ivory area but at a higher level were two Hellenistic tombs, of a man and of a woman side by side. They were oriented almost due east and west, and their heads lay to the east. The woman was on the south. She wore a pair of gold ear-rings. Both graves held many vases, and there was a marked difference in their character. In the woman's grave there were at least twenty-five tear bottles, but in the man's grave only about ten. On the contrary in his grave (PLATE 10, *c*) there was a lagynos, a Megarian bowl, three shallow bowls, a terracotta figurine, and other vases. The graves may be provisionally dated to the second century B.C. pending detailed study of the pottery. It is curious that at that date interments should have been made at this spot, which is well within the walls of the lower town of Hellenistic Mycenae.

6. The House of the Oil Merchant

This house was discovered in 1950, and a brief account of its discovery and the first finds made in it has already appeared.[15] In 1952 practically the whole of the basement of the house was cleared, and efforts were made to try to define its extent. The house was originally called The House of Stirrup Jars, but, since it now seems that most Mycenaean houses had a storeroom with large stirrup jars, it is better to give it the more distinctive name of ' The House of the Oil Merchant '. The house lies to the south of the tholos tomb called ' Tomb of Clytemnestra ' and close to the east side of the modern carriage road (FIG. 1, 14). It is built on terraces on the sloping hillside (see Plan and Sections FIGS. 2–4). On the east the house is supported by a long wall built of rough blocks of limestone in the Cyclopean manner (PLATE 6, *a*). This, which is about two to three metres high, is the main supporting wall of the basement and that part of the house which stood above the basement. At the south end, where the rock drops there is underneath the Cyclopean wall a high foundation built of poros blocks which seem to be re-used. Among the lower courses of poros blocks some large limestone blocks are intermingled. This foundation projects just over one metre from the face of the Cyclopean terrace, and is about two metres high. It varies in height according to the slope of the rock. About the middle of its length the Cyclopean Terrace wall has a set back, but this as yet does not seem to have any definite functional purpose. At its northern end the Cyclopean terrace wall has a clear angle and returns westwards. North of this is the angle of another Cyclopean terrace wall which also returns westwards, leaving a narrow lane about three metres wide. This northern terrace wall seems also to be the supporting wall of a large

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[14] Schaeffer, *Enkomi-Alasia*, 379 ff., fig. 116 ff., pls. C, D, CXVI.

[15] *JHS* 1951, 255 ff., figs. 1, 2.

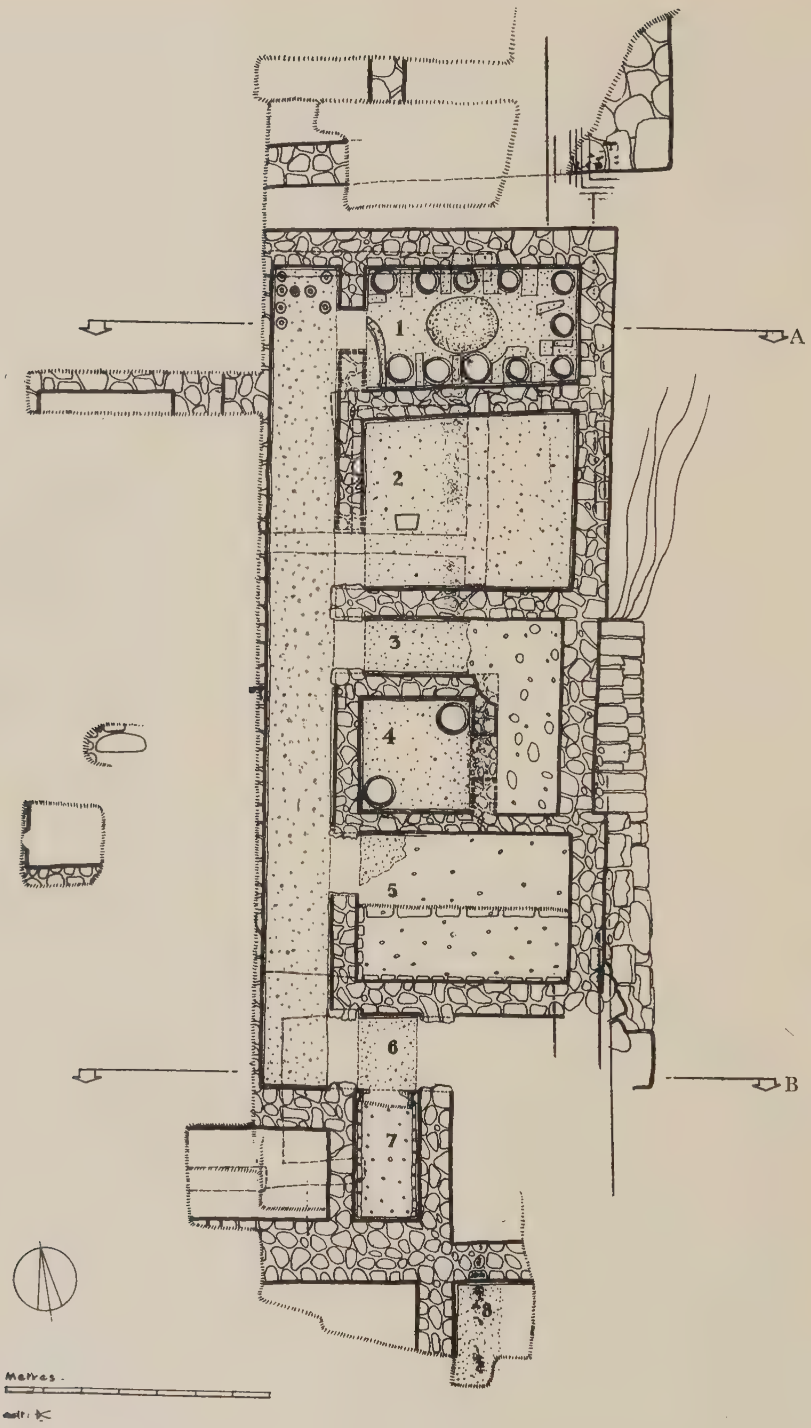
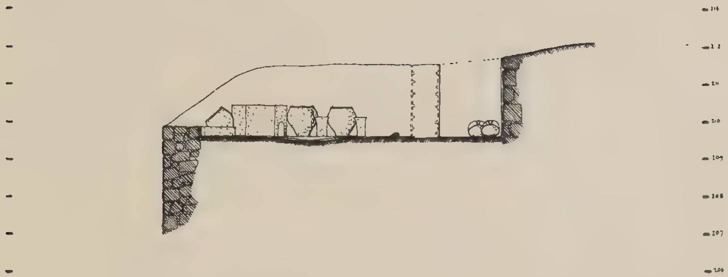

1
2
3
4
5
6
7
8
A
B
Metres

FIG. 2.—MYCENAE: THE HOUSE OF THE OIL MERCHANT, PLAN.


212
211
210
209
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207
206

FIG. 3.—MYCENAE: THE HOUSE OF THE OIL MERCHANT, SECTION AT FIG. 2, A.

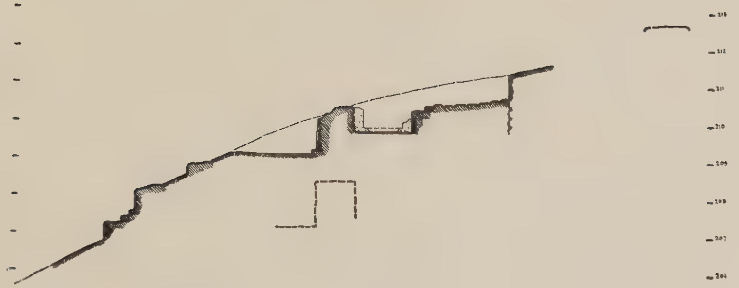
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FIG. 4.—MYCENAE: THE HOUSE OF THE OIL MERCHANT, SECTION AT FIG. 2, B.

private house similar in type to the House of the Oil Merchant. A trial in it revealed below the surface humus the burnt debris of a house which had been destroyed by a violent fire. During the trial two fragments of large well-cut stone bowls in serpentine were found. Here, too, was found half of a model figure-of-eight shield in ivory in excellent condition (PLATE 4, *d*). On the front of the ivory are three groups of three holes each, probably for inlaying gold or some other precious material. At the back are cuttings for attachment to a flat surface. This may have served as a handle.[16] Thus when this house (The House of Shields) can be excavated, there is every hope that it will prove as fruitful as the House of the Oil Merchant.

The part of the house best preserved and that so far excavated is the basement which is supported by the Cyclopean terrace wall mentioned and is bounded on the west by another terrace wall. This latter wall upheld part of the main floor of the house on a higher terrace to the west which would have been on the same level as the story above the basement. This main floor was three metres higher than the floor of the basement. The basement consists of one long corridor which runs along the face of the western terrace wall. Off it a number of rooms branch out to the east which are numbered from the north 1, 2, 3, 4, 5, etc. (see Plan, FIG. 2).

In Room 1, which was entirely cleared this year, was an elaborate installation of eleven large pithoi ranged round the walls (PLATE 6, *b*). They had small bases and wide bodies, and so had to be supported on either side by low walls of clay. Underneath one pithos (the second from the east against the south wall) there was provision for heating. It is said that in Tuscany provision for heating is always provided in oil stores to prevent the oil congealing in cold weather. The pithoi have small bases set in collars of clay and were presumably about the same height, 1·70 m., as those in the House of the Wine Merchant (PLATE 10, *a*). In the centre of Room 1 were found the fragments of a tall, undecorated jar of good shape. The walls and floor of Room 1, like the walls and floors of the main corridor and the other rooms, were covered with clay plaster well mixed with chaff. In the centre of the floor there is an oval sump, presumably intended to catch any overflow from the pithoi. There is also a low raised and rounded line of plaster about 0·10 m. high running from the west end of the south wall across the door from the corridor. The object of this presumably was to prevent oil from running out into the corridor. The low walls which uphold the pithoi are built of clay and covered with a layer of plaster similar to that on the floors and walls.

It is clear from the evidence of the doorways and their jambs and from the traces in the walls that the construction of the house depended largely on wood. The thresholds of the side rooms were apparently of wood, and the angles of the doorways leading from the main corridor were bound with wood to hold firm the clay and rubble construction (PLATE 6, *c*). The walls dividing the rooms are of small stones, rubble, set with clay and on top of them lay in each face horizontal beams which were the base for the timber framework to bind together the crude brick superstructure, for as usual in Mycenaean building the upper stories were of crude brick bound with timber like English black-and-white architecture.

The basement was full of burnt debris from the upper stories, including many fragments of crude bricks which had been baked hard from the fire which destroyed the house. One brick which was almost complete seems to have measured 0·40 m. by 0·25 m. by 0·15 m. Among the debris also were many fragments of much-burnt fresco with designs in an interesting and unusual outline technique. These were found principally in Room 2.

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[16] Compare Evans, *Prehistoric Tombs of Knossos* (*Archaeologia* LIX), 44, fig. 41. The handles on the steatite pithoi from the Tomb of Clytemnestra *may* have been in the form of figure-of-eight shields, *BSA* XXV 367 f., fig. 80; Wace, *Mycenae* 38, n. 3.

At the north end of the main corridor were found in 1950 thirty large stirrup jars, most of which had been stoppered with clay and had their stoppers sealed (PLATE 7). In the spout of the stirrup jar was placed a stopper, in shape much like a champagne cork, which was fastened in with string. The string could serve either to secure the stopper or to provide an easy means of extracting it. Over the stopper and spout was then placed a cap of clay[17] which was sealed several times with a signet (PLATE 7, *c*, *d*). This sealing would serve a double purpose. It would prevent any tampering with the contents and also serve to identify the brand or the owner of the oil. It seems certain that the stirrup jars contained oil, for the clay of many of them shows clearly that it is heavily impregnated with oil. This is obvious when they are compared with similar vases from elsewhere. Three signets can be identified (PLATE 9, *d*). One shows a demon standing between two lions which are turned away from him, another shows an ox scratching its nose with one hindfoot, and the third shows three girls dancing. The first two signets seem to have been of stone. In fact, the impressions of the ox signet show that a small chip had broken off the surface at the bottom. The signet with the girls dancing seems to have been of metal, perhaps gold. Parallels for the stoppers of stirrup jars are known. In the House of the Columns in 1939 in the room of stirrup jars in its basement was found the spout of a stirrup jar with a stopper still in it. In the Nauplia Museum there was the spout of a stirrup jar with a stopper of red clay in it, but the provenance of this object is not known.[18]

The stirrup jars had been exposed to an intense heat, for many of them had been distorted by it, and some fragments were in addition partly fused and vitrified (PLATE 7, *b*, *d*). Apparently they had been deliberately broken. Some had been smashed. Others had had their spouts knocked off, and others seem to have been unstoppered. The object of this destruction was no doubt to spill the oil and add fuel for the flames when the house was fired.

The southern part of the main corridor was empty, but there were signs of Hellenistic disturbance at the entrance to Room 2.

In Room 1 in the north-eastern corner behind a pithos was found a clay tablet inscribed in the Linear B Mino-Mycenaean script. It was broken in three pieces, and seemed analogous to an old piece of paper torn up and thrown away in a corner. In Room 2 in the debris in the south-eastern corner were thirty-seven more inscribed tablets or fragments of tablets.[19] They lay scattered among the debris, and apparently had fallen from the upper floor on the collapse of the house when it was burnt.

Room 3 is a passage that turns at right angles southward to Room 4, which has no direct connection with the corridor. It is not easy to understand the reason for this arrangement unless the plan of the rooms on the upper floor demanded it. Room 4 was full of vases (PLATE 6, *d*). In the south-west and north-west corners stood two large storage jars now cracked to pieces from the fire. About the room lay many other vases all cracked and broken from the fire. They include two painted stirrup vases of L.H. IIIB style (PLATE 8, *b*) and two fine spouted bowls of superb fabric painted with simple lines inside and out (PLATE 1, *e*). There are also six ladles decorated with much restraint, for they have only a pattern of dots along the rim and a plaited band design along the handle (PLATE 8, *d*). In fabric, however, they are excellent. These vases must all be assigned to L.H. IIIB because they form one group. To the same period must be attributed a large jar decorated with a pattern which some might consider L.H. IIIC. The stirrup jars found in 1950 at the north end of the main corridor from the presence among them of three jars of excellent fabric decorated with plain bands must be dated to L.H. IIIB (PLATE 7, *a*). The coarser stirrup jars vary in colour (white on black, red-brown on buff), but there seems no reason to suppose that they are not all of the same date. In Room 5 nothing was found. Soundings were made beneath its floor, and in the fill below several fragments of vases of undoubted L.H. IIIA date were found, notably the fine cup here figured (PLATE 8, *e*). Across the middle of the room below the floor a foundation wall runs east and west. This does not seem to have supported anything above and is to be regarded as a wall to strengthen the foundations. All the footings of the walls of the house are about 0·10 m. wider on each side at the floor level, and in most cases 0·10 m. below the floor. This is obviously done to strengthen the whole structure. Room 6 is probably the entrance to a staircase which at the eastern end of a small lobby ran up southwards to a half-landing, where it turned west and then north up another short flight to the level of the main floor above (see Plan and Sections FIGS. 2–4). The south-eastern part of this is badly damaged and the exact form of the staircase cannot be determined, but the small room called Room 7, which has plastered walls and a doorway narrowed by plastered jambs, was probably a kind of cupboard underneath the upper flight of the staircase. The wall at the south end of this Room 7 is thickened no doubt to support the weight of the staircase above. At the left side of the door to the cupboard under the stairs there is a great mass of debris burnt into one hard, compact mass of decomposed crude brick, stone, and lime. This is probably the remains of the lower part of a pier of rubble bound with wood which formed the newel of the staircase. The south wall of this area seems to have been the south wall of the house. On the south, but at a lower level, was found a small room (FIG. 2, 8) which has not yet been cleared and is part of the House of Sphinxes. At its north end is a clay shelf (about 0·40 m. wide) on which were found in two piles a number of curious objects of unbaked clay. The clay is well mixed with chaff and like that employed for plastering the walls and floors. The objects are triangular in section about 0·09 m. high, 0·30 m. long, and 0·09 m. wide at the base, and their edges are rounded. Against the west wall of the room lie two round discs of similar clay, about 0·35 m. in diameter. The southern part of the room is full of the fragments of small kylikes and shallow bowls of unpainted pale yellow-buff ware. Around these was much fine black wood ash which might be the remains of wooden shelves on which the vases had stood. In the centre stood two jars of plain red brown fabric, and on top of one of these lay a small ivory plaque which shows clearly the traces of fire. It represents a sphinx couchant to the left with long hair. There is a crown on its head, and the wings are spread before and behind it (PLATE 9, *c*).[20] It probably once formed part of the inlay of a wooden casket. It is 0·07 m. long.

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[17] This is what Homer apparently called κρήδεμνον, *Odyssey* III 392.

[18] At the Menelaion the sealed spout of a large stirrup jar was found, Dawkins, *BSA* XVI 9. The Nauplia Museum example may be from Tiryns, see *AA* 1935, 75, 82, fig. 8. Other instances of stoppers are given by von Mercklin in the same article, *ibid.* 74 ff.

[19] The tablets are edited by Dr. Emmett Bennett in the *Proceedings of the American Philosophical Society*, vol. 97 (1953), 422 ff.

On the terrace to the west practically nothing is left of the main floor of the house. It has been much damaged by cultivation, by the construction of the modern carriage road, and by the planting of oleanders by the roadside.

In 1950 beneath the floor of the southern part of the main corridor many pieces of brightly coloured fresco were found. They presumably come from some earlier building which had stood on this site.[21] The largest piece shows a man in a white tunic with black dots marching to the left (PLATE 9, *a*). On his legs he wears white gaiters fastened with red garters below the knees. He is painted the usual conventional red-brown colour. His knees are bent as if he was supporting some considerable weight. Over his shoulder he bears a pole from which depends behind him a large white object of uncertain shape. By his side and in front of him, but on a lower level, is the upper part of another man who wears a pale blue tunic with black dots. The first man described may be supporting one pole of a litter. At all events the fresco is of excellent style, and other fragments found in the same context are of similar good quality. There are parts of women's dresses, a charging bull, the white-gaitered legs of a man, part of a rosette, and other decorative fragments. These frescoes like the pottery found below Room 5 should presumably be dated to L.H. IIIA. The *floruit* of the house itself from the pottery found in Room 4 is to be dated to L.H. IIIB which may be said to run from about 1340 to 1210 B.C.[22] This dating is supported by the fact that above the ruins of the house there were found in 1950 a few pieces of L.H. IIIC pottery.

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[20] Compare the sphinxes on a comb from Spata, Perrot-Chipiez, *Hist. de l'Art* 637, fig. 284.

[21] Several fragments of fresco of the same style were found under the floor of Room 5 with L.H. IIIA vase fragments.

An interesting isolated find from this house in the burnt debris in Room 4, is half (broken) of a stone mould for casting a winged axe of bronze (PLATE 9, *b*). No actual example of this type of weapon seems to be known from the Aegean area, but it is characteristic of the *terremare* culture.[23] This mould most resembles an example which Säflund dates to T.M. IIB which begins in the thirteenth century B.C., a date which would agree with that of this mould found in a house of L.H. IIIB date. Säflund, however, remarks that no example of this type of axe is known from the Aegean. It is curious that though a mould for casting such axes has now been found at Mycenae, where presumably this type might have been made and used, no actual example has yet been found anywhere in the Aegean area. Is this mould an import which was not popular?

7. THE CYCLOPEAN TERRACE BUILDING AND THE HOUSE OF THE WINE MERCHANT

We first began to examine the so-called Cyclopean Terrace Building (FIG. 1, 1) in the short campaign of 1923.[24] In 1950 at the request of Dr. Papademetriou we undertook further work there in order to supplement Mr. Petsas' investigations in the house he had discovered farther to the west with storerooms full of unused vases.[25] In 1951 Mr. Sinclair Hood [26] did some more experimental work in order to try to define the area of the building. In doing

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[22] The dating (1300–1230 B.C.) suggested by Furumark (*Chronology of Mycenaean Pottery* 115) for this stage is not acceptable, for he gives one hundred and twenty-five years to the L.H. IIIA stage (which to judge by the amount of pottery so far known cannot have been so long) and only seventy years to the L.H. IIIB stage (to which belongs an enormous amount of pottery). It is better thus to shorten Furumark's L.H. IIIA stage and place its end not long after the close of the Amarna epoch and to expand the L.H. IIIB stage accordingly by the same amount at its beginning. I would put the transition from the B to the C stage in the last quarter of the thirteenth century B.C. Furumark actually dates the end of his B stage and the opening of his C stage to 1230 B.C. I would prefer to regard the last quarter of the thirteenth century as a transitional phase between the B and C stages. Thus I suggest the date 1210 B.C. as an approximate date for the division between B and C. We can tabulate my suggestions with Furumark's thus:

B.C.	*Furumark*	*Wace*
1500	L.H. II	L.H. II
1425	L.H. IIIA	L.H. IIIA
1400		
1340		L.H. IIIB
1300	L.H. IIIB	
1230	L.H. IIIC	
1210		L.H. IIIC
1100	L.H. IIIC end	L.H. IIIC end

The years just after 1425 B.C. and on either side of 1210 B.C. I would regard as transitional periods between L.H. II and L.H. IIIA and between L.H. IIIB and L.H. IIIC. I would prefer not to try to define at present Furumark's subdivisions of L.H. II, L.H. IIIA, and L.H. IIIC pending the accumulation of further evidence. Precise dating of any phase of Mycenaean pottery is a refinement which our present knowledge does not justify.

[23] Säflund, *Le Terremare* 167 f.; pls. 53, 54. His pl. 53, 3 seems to be the nearest parallel for this mould. Compare Montelius, *Vorklassische Chronologie Italiens*, pl. IX 14, pl. XIV 7*a*. I owe these references to Professor Gordon Childe.

[24] *BSA* XXV 403 ff.

[25] *PAE* 1950, 203 ff.; *JHS* 1951, 239 f.

[26] *JHS* 1952, 97 f.

so he discovered the corner of a storeroom containing tall pithoi and large stirrup jars like those in the House of the Oil Merchant. In 1952 work was continued on this site and interesting discoveries were made. The site is difficult to excavate. It lies at the bottom of a terraced slope, and continuous cultivation and stone robbers have much affected the ruins.

The part called the North Megaron which resembles a megaron in plan consists of tall foundation walls over three metres high and 1·50 m. wide which must have supported some important structure, perhaps a megaron. Into the space enclosed by these walls was thrown a fill of stones, and the whole, walls and fill, must have been the foundation for some solid structure above, all traces of which have now perished. The walls on the east rest on rock, but elsewhere on earth. In the south-west corner a floor level several times renewed lay level with the top of the rock to the north. Beneath this floor was a deposit of pottery, which gives a terminus *post quem* for the building of the great walls. The pottery is markedly homogeneous in character and runs in date from late L.H. II to L.H. IIIA. Since in the top of the fill between the walls L.H. IIIC burials were found in 1923, the building of the walls must date from the intervening period, in other words from L.H. IIIA or L.H. IIIB. In 1952 part of the fill in the southern, or back room, of this North Megaron was excavated, and though the deposit of pottery was not found to continue southwards on the same scale, there was nothing to conflict with this proposed dating.

The area adjoining the North Megaron to the east has not yet been sufficiently tested, but the natural slope of the hill here seems very steep. To the south-west of the North Megaron a large terrace wall runs roughly north and south, and in construction it does not appear to differ much from the walls of the North Megaron. At its western foot was found a ruined storeroom which seems to have been wantonly destroyed. As yet no walls to define the limits of this storeroom have been found, but it was clearly large, for the length at present excavated is ten metres. It would appear that the Cyclopean terrace wall along its east side was built partly over its ruins after it had been destroyed. In this storeroom, called The House of the Wine Merchant, were found over fifty stirrup jars about 0·40–0·45 m. high. Some are complete, others smashed to pieces. Some of the broken jars lay in a heap at the foot of the terrace wall. Others lay scattered among or inside the broken remains of large pithoi which had stood in the room (PLATE 10, *b*). Of these pithoi there were at least eight. They measure 1·70 m. in height and had small bases, wide bodies, open mouths (PLATE 10, *a*). They were supported by rectangular, almost square, blocks of whitish yellow clay placed irregularly about the room. The clay blocks are of varying heights, some at least seem to have been made of crude brick. Some undoubtedly served to support the pithoi. Perhaps others were used as convenient bases on which to stand jars for filling or pouring. The stirrup jars differ in types; some have white decoration on a red or a blackish ground (PLATE 11, *c*), others a brownish decoration on an oatmeal ground (PLATE 11, *a*). In spite of this variation, they were uniform in fabric and, like those from the House of the Oil Merchant, are to be considered to be of local Mycenaean fabric. Only one (PLATE 8, *c*) shows a marked difference in fabric, and presumably is an import from elsewhere. It might even be Cretan. Among the stirrup jars lay a fine rhyton, which, though broken, is complete except for the tip at the bottom (PLATE 11, *b*). It is 0·55 m. long with the handle and is of pinkish clay with a buff slip, and is decorated with a bold octopus pattern in red brown picked out with white paint. Above and below there are bands of thick and thin horizontal lines, and the overhanging rim bears a dart-like pattern. This rhyton may perhaps have been used to fill the stirrup jars from the big pithoi. The rhyton is of L.H. IIIA date, and should probably be assigned to the middle part of that phase. Thus the stirrup jars and the pithoi and the building in which they lay were in use in that period. This would not be inconsistent with the date of the pottery below the fill of the North Megaron, which needs careful study.

The history of the whole area is still most obscure. The walls of the North Megaron are presumably L.H. IIIB. The storeroom with the stirrup jars is older. The Cyclopean terrace wall which runs along the south side of the storeroom (House of the Wine Merchant) is presumably later, but can it also be L.H. IIIB? Finally, after the buildings were destroyed, burials took place in L.H. IIIC times in the top of the fill. Further patient excavation is needed to solve these problems, for the site is difficult, and has suffered so much from cultivation and the work of stone robbers.

Among the stirrup jars in the House of the Wine Merchant were found over eighty discs chipped from broken pottery or from stone (PLATE 11, *d*). Discs like this are not uncommonly found in small numbers on Mycenaean sites, and are usually called counters for playing games. It is hard, however, to see what game could be played with over eighty counters, and it is not easy to see why they should be in a storeroom with stirrup jars and pithoi. A more probable explanation is that they served as covers for the tops of jars or for the spouts of stirrup jars. At the Menelaion at Sparta in 1910 were found some sealed clay caps that had covered jars.[27] The method employed seems to have been as follows. First the disc was laid on the top of the jar or spout. This was covered with vine leaves. Over these was applied a thick cap of clay to make the whole airtight. The clay, then, while still damp was sealed several times with a signet to prevent tampering and perhaps also to indicate the origin or the ownership of the contents. The cap was fastened in place by cords. It will be seen that this method differs somewhat from that used for the oil jars in the House of the Oil Merchant described above. Possibly the difference of method is to be accounted for by the difference of contents, oil as against some other liquid, wine for instance, as conjectured in this case. The stirrup jars in this house certainly had not contained oil, for their clay is not impregnated with oil like the other stirrup jars.

Future excavation on this site will no doubt throw more light on such problems, and above all on the question whether the Wine Merchant like the Oil Merchant was literate and employed the Linear B script for his accounts.

One incidental discovery is of interest for the history of Mycenae. In the surface layers above the ruins of the Cyclopean Terrace Building area were found together with fragments of Hellenistic pottery many fragments of lamps which cannot be dated earlier than about the third or fourth century A.D. It has always been assumed that Pausanias found even Hellenistic Mycenae in ruins. In fact, he implies it. The presence of late Roman lamps, however, suggests that there was some inhabitation of the district in the centuries succeeding the days of Pausanias. This hint of a comparatively late inhabitation of the region is thus perhaps of some minor importance as regards the condition of Greece under the early Roman Empire.

8. THE TSEKOURAS SITE

In 1950 we examined some outlying areas around Mycenae in the hope of being able to find the site of pottery kilns and the source of the clay which the Mycenaeans used for mortar. We had begun this search in 1939, and our attention was then drawn to the Plesia area.[28] Further examination of Plesia in 1950, however, did not confirm the reports of ancient kilns or of Mycenaean sherds in that area.[29] There is potter's clay in plenty at that site, and clay is still dug from the beds there and taken to modern potteries at Koutsopodi and Argos.

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[27] *BSA* XVI 9 f., fig. 5, pl. III.

[28] Wace, *Mycenae*, 123, 135.

[29] *JHS* 1951, 257.

Abandoned kilns on the actual site are evidence that in comparatively recent (Turkish?) times potteries existed at Plesia itself. We were told that at Longaki, an area marked by Steffen[30] on his map of Mycenae and its environs, there were other extensive beds of similar clay. This area is much nearer to the citadel of Mycenae, and since it lies above the citadel, the transport of clay to the citadel and surrounding part would be downhill and thus easier. Longaki is in fact about twenty minutes on foot from the Postern Gate of the Citadel and just above the spring called by the modern Mycenaeans Neromana, but by Steffen and archaeologists Perseia. This spring was the source of the water led down to the secret Mycenaean cistern[31] outside the north wall of the Citadel close to the Postern Gate and probably also of the water brought to the Perseia Fountain House which we believe we have now identified in the Hellenistic Fountain House between the Lion Gate and the so-called 'Tomb of Clytemnestra' as described in Part II of this report.

On the land of Mr. Tsekouras about five minutes' walk east of the Neromana spring there are many signs of ancient habitation. Surface examination resulted in the discovery of Mycenaean sherds and classical and Hellenistic tiles, together with broken crude brick that had been exposed to fire. It seemed that this might be a suitable site for pottery kilns, since it is close to a good permanent supply of water and to unlimited beds of clay. The clay today is known as *kanatochoma* which is sufficient indication of its qualities. We therefore decided to make tests here, and Dr. Stubbings and Lord William Taylour dug a series of trial trenches here from July 14th to 19th.

No actual buildings were found, and no deposit of wasters from kilns came to light. A good deal of broken pottery of various dates was found, and many tiles, both classical and Hellenistic, and in particular many little wedges of clay which are believed to be used by potters to support pots or tiles in the kiln. There is no evidence for the date of these wedges, except that one bore an inscription in Greek letters. Very few fragments of L.H. III pottery were found. There were also fragments of vases of geometric and orientalising date. Three pockets of black earth were found and also a deposit of clay which seemed to have been brought to the site for special use, since it was not lying in a natural state. Thus though there is no evidence as yet that there were Mycenaean kilns in this area it seems probable that pots and tiles were made here in ancient days. The area needs further careful and patient exploration, and perhaps a chance discovery will provide a useful clue.

On the slope above the presumed pottery site in a field where Mycenaean sherds were common on the surface, other trials were made which resulted in the discovery of a house of several rooms. This lay close to the surface and had suffered much from ploughing. In it many vases were found, and none appears to date earlier than the L.H. IIIB phase. The shapes represented are ordinary L.H. III types, stirrup jars, piriform amphorae, alabastra, kylikes, etc. The vases are made of a soft pale buff clay, and the painted patterns in consequence are not well preserved. The vases all appear to have been made from the local Longaki clay, and their standard is not equal to that of the usual L.H. III wares.

A. J. B. Wace

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[30] *Karten von Mykenai*, pl. I.

[31] Karo, *AJA* 1934, 123 ff.

PART II. THE PERSEIA FOUNTAIN HOUSE

(PLATES 12–16)

1. INTRODUCTION

IN 1892 Tsountas [1] in the course of exploration on the top of the ridge between the 'Tomb of Clytemnestra' and the Lion Gate found a painted circular cap of poros (0·61 m. in diameter), which from the cuttings in it clearly seems to have been connected with some form of installation for water (PLATE 14, *b*). It bears an inscription [2] which as restored refers to Perseus. This inscribed cap Tsountas says he found among later ruins, but he did not specify the exact position. In 1922 therefore we investigated the ruins of apparently Hellenistic date which lie directly to the south of the modern carriage road on the top of the ridge to the north of the 'Tomb of Clytemnestra'. A long terrace wall of ashlar work in poros was found running in an east–west direction along the south side of the modern road. In front of it, against its north side, lie two cement-lined basins (PLATE 14, *a*). When these were first found and partially examined in 1922 it was suggested that they might be part of a gymnasium of Hellenistic date.[3] At the same time a trial trench XIa by side of the steps was dug down about 0·25 m. into the soft rock below. In 1939 further trials were made behind (to the south of) the western part of the main terrace wall. Trench VII, which was dug to rock, was part of this work. At the same time the curved wall was exposed and part of the 'votive deposit' was excavated. The pottery then found, which was lost in the Nauplia Museum during the war, was of the same character as that found in 1952 and described below. In 1952, as part of the programme of exploration on the top and sides of the ridge which runs westward from the Lion Gate, it was decided to clear these ruins completely and study and plan them afresh. In the course of the work, which was directed by Mr. Sinclair Hood with Miss Marian Holland as architect, it was recognised that these ruins are those of a fountain house of Hellenistic date. This Fountain House is to be identified with the Perseia Fountain House seen by Pausanias [4] among the ruins of Mycenae. Since they are in a prominent position, Pausanias could hardly have failed to see the Fountain House, even if it was already in a somewhat ruinous condition.

The report which follows divides into two main sections. The account of the Fountain House itself and its architecture with the plan and sections is the work of Miss Marian Holland. The account of the actual excavation and of the pre-Classical strata and finds is the work of Mr. Sinclair Hood. Certain problems connected with the pre-Classical remains in the area must perforce wait for further excavation in the neighbourhood, in the hope that more evidence will then be forthcoming to help elucidate them. Thus this report is to be regarded to some extent as provisional. Mr. A. G. Woodhead has edited the inscribed boundary stone from a sanctuary of Hera which was re-used in Hellenistic times to separate Basins B and C.

A. J. B. W.

2. ARCHITECTURAL REPORT

The remains of a main terrace wall of ashlar poros and a series of water basins lying against it have now been cleared. They run along the south side of the modern road, above the 'Tomb of Aegisthus'. They (PLATES 12–13, *a*) belong to a Fountain House of the post-Classical period, and were supplied at different times by a series of water channels leading in from the east, from the general direction of the aqueduct.

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[1] *AE* 1892, 63.
[2] *IG* IV 493.
[3] *BSA* XXV 420.
[4] II 16, 5–7.

Immediately south of basin A (refer to plan and sections PLATES 12–13), there are some poros blocks, laid on earth (PLATE 15, *b*). They are badly preserved, but seem to define two lines of building at right angles to each other. The plan of this structure is not strictly in line with the basin complex, although the 'steps' on the northern side run so close to the great Main Wall that they are virtually overhung by its top course (Section B.B.). The steps overlap by about fifteen centimetres in each course, the lowest still considerably above the level of Basin A. The purpose, or indeed even the extent, of the poros building is unknown; it is possible that it was an earlier fountain-house, with broad steps descending to a pool, in the fashion of Minoe on Delos.

It is also possible that the blocks belong to a shrine, either of Perseus or Hera. Tsountas found an inscription in this area referring to Perseus. As the source of the water was undoubtedly the spring Perseia (modern Neromana), which has supplied the aqueducts, ancient and modern, since Mycenaean times, it would not be surprising to find some shrine to the hero near the public water supply. At the same time the existence of a sanctuary of Hera in the vicinity is suggested by a boundary stone found re-used as a dividing wall between the basins B and C, bearing an inscription ΟΡΟΣ 𐌇ΕΡΑΙΑΣ (see below p. 27).

At intervals behind the Main Wall there are poros blocks, badly weathered, which may be the remains of an earlier terrace wall, contemporary with the steps. If these belong to a Fountain House, the temenos, if any, may have been immediately to the west, above the poros wall, although no other traces of building have been found there. With these remains may be associated the north-west–south-east water-channel, the earliest of the three on the upper level. It is built of irregular slabs on stones set on edge and apparently had no floor other than the earth. Its exact relation with the steps is not clear from the scanty remains, but it must certainly have gone out of use with the building of the Main Wall.

Apart from the general post-Mycenaean character of the masonry, there is little evidence for the date of the poros building.[5] At the west end, the flight of steps runs over a well (6·65 m. deep and 1·20 m. in diameter) which must have been abandoned before the steps were laid. Geometric and archaic sherds occurred in the top metre of fill and a few even lower. Some roof tiles of a typical conglomerate Corinthian fabric, found beneath the basin floors and elsewhere, may be fifth century or at least no later than the fourth. They could be assigned either to the early fountain-house or to a sanctuary associated with it.

The great Main Wall, about twenty-eight metres long, is built of light-coloured limestone or hard poros (PLATE 15, *a*), in good ashlar masonry with broken joints, and anathyrosis on the ends of the blocks. The pryholes in the tops of the highest preserved blocks show that there was at least one more course, or five in all. At the western end, the blocks are carefully fitted (PLATE 16, *b*) against a curving wall, evidently earlier, but of unknown purpose. The bottom course, laid on earth, lies slightly lower than that of the Main Wall, and the area behind seems to be filled with loose stones. It is possible that there was some sort of podium here. Was it intended for use in connection with Tsountas' inscription?[6]

The Main Wall rests on the south side of a water channel carefully cut from the same material (PLATE 15, *a*). Toward the west, the weight of earth piled over the Tomb of Clytemnestra has pushed the wall out over the channel itself. Holes cut in the floor of the basins showed that the channel begins somewhere east of the poros steps, probably at the east end of basin A, where the rock drops abruptly from the upper level. The channel is in the form of a shallow U with a rabbet cut on the outer side, presumably indicating the contemporary ground level. At the western end the channel veers to the north to avoid the curving rubble wall.

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[5] A layer of white clay plaster lies almost directly below it, and covers a large area along the south side of the Main Wall. Below this clay layer all the pottery found was prehistoric, M.H. or L.H.

[6] *IG* IV 493.

The north–south channel seems the appropriate candidate for the water course at this period. The north-west–south-east one was diverted by it so that the water was carried around the end of the Main Wall, to drop over the rock ledge to the stone channel a metre below. The north–south channel is made of heavier, more regular blocks than those used for the earlier one. Some of the cover slabs were found *in situ*. The block now in place at the corner of basin A is probably to be connected with the still later east–west channel. It would seem highly desirable to have some sort of catch-basin at the point of fall of the water, but the floor in the corner of the basin must be removed to determine this exactly.

Basin A is similar in construction to the Main Wall, although not bonded to it. The blocks have no pryholes, but it is probable that the original wall was a course higher than it now stands, or as high as the course of limestone blocks now in place. The single original block of this course which is preserved is at the east end. The floor of the basin is of perfectly preserved hydraulic cement, four centimetres thick, and laid over a bed of small stones, about the size of a fist. The hemispherical depression near the east end, lined continuously with the floor, was the point where the last of the water collected when the basin was drained for cleaning. The floor, which slopes gently down from south to north, is lowest at this point, rising rather more sharply at the east end. In the north-east corner, a half-metre above the floor, is a curious niche hardly five centimetres deep, lined with the same cement that covered the walls. It seems too shallow for a step, and comes six centimetres below the bottom of the supply channel or maximum water level. In the west wall near the back of the basin there is a rough outlet hole, the bottom of which is only slightly above the floor. The block on the floor in the north-west corner of the basin is like those in its walls, and has probably fallen from its original position, though it may have been used as a step.

Both the east and west walls of the basin were originally carried forward for more than two metres (PLATE 15, *b*). At the east end some of the blocks remain set on bedrock. At the west end the wall is gone but the foundations are left, set down into earlier cuttings in the bedrock and clearly continuous with the foundations of the basin. The area between these walls was first paved with rough stones and gravel, packed hard, and the outside of the basin wall was cemented like the inside. It seems very likely that this was a covered porch, roofed continuously with the basin itself. Unfortunately the modern road covers the outer or northern limits of this area and even were the excavations to be continued in that direction, it is probable that any traces were destroyed in building the road-bed.

Basins B and C are not as wide as A and apparently were originally one. Their walls are of smaller blocks, and are clearly added to the original structure. The general scheme is similar: ashlar walls and a floor of a single layer of loose stones, covered alike with hydraulic cement. The cement on the walls has been much damaged by the subsequent shifting of the blocks. A rough outlet hole in the west wall allowed the water to be carried off by the old stone channel. Perhaps this part was never roofed, but was used chiefly for watering animals.

It seems likely that the east–west channel came into use about this time, either with the construction of basin A or basin B–C. The last section is cut out of a single block set into the wall of the basin, but the workmanship is inferior to that of the lower channel.[7] The next section is built up out of separate blocks, but has a stone floor as well as sides. The line of the channel was picked up again in the next trench to the east.

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[7] Although the use of limestone is generally associated with the late repairs, it should be pointed out that all three of the upper water channels are of limestone exclusively.

The Fountain House must have fallen into disrepair, because it shows signs of considerable renovating, although of an inferior quality of work. The limestone blocks on the Main Wall and the front wall of basin A, and those fallen below the inlet, are all of this period. So, probably, is the re-use of the boundary stone set into the cement floor as a divider between basins B and C. Doubtless, as there is no sign of any outlet for basin B, the dividing wall had no upper course, and the water simply overflowed into basin C. Also at this time the area in front of basin A was repaved, partly with limestone blocks, partly with re-used slabs (PLATE 15, *b*). These three blocks, lying at the east end, have cuttings for T-clamps, and one has a dowel hole. They are only ten centimetres thick, but without actually raising them it is not possible to say whether they were originally slabs or have been cut down from wall blocks. The south-east one has been cut down slightly over part of its surface, as though for the setting of an upper course. Over this floor there was a thick layer of coarse cement, carried up the face of the wall over the original coat. It seems improbable that this area was ever a basin, and certainly not as long as Basin A was in use. The rough cut through the east wall was presumably made in connection with the drainage ditch for the modern road, a theory supported by the fact that the paving stones in line with it have all been removed. The roughly square hole next to this cut may have been made to take a post supporting the roof. Its casual character seems in keeping with the late repairs, and the addition of wall blocks suggests that the roof had been damaged. The north-west corner of basin A is thickly plastered on its western face. This plaster was carried around the corner for two or three centimetres and then turned north again (PLATE 16, *a*). The wall which it covered after this point was not in line with the foundations beneath, and may also be assigned to the period of rebuilding. It should be noted that the bottom line of the plaster curves up at the corner as though on the line of a low parapet in front of basins B and C. No traces of any paving were found here, though the plaster along the walls has a clear bottom edge. Perhaps there was a parapet, low enough for animals to reach over easily, merely to confine any water splashed over the edge of the basin.

This form of the Fountain House presumably belongs to the Hellenistic period. Although the pottery indicates that Mycenae was inhabited throughout the fifth and fourth centuries, apparently the population was very small. There seems to have been a revival in the third century B.C. Fragments of roof tiles of characteristic fine-grained red Hellenistic fabric may belong to the preliminary stage or to the late repairs.

M. R. H.

3. THE EXCAVATION [8]

In July 1952 work was continued in this area with the object in the first instance of discovering the character and history of the structure hitherto tentatively described as part of a Hellenistic Gymnasium, and now known to be a Fountain House. Meanwhile some exploration was undertaken of the Mycenaean levels behind the Fountain House to the south and west.

The Fountain House is described by Miss Marian Holland (see pp. 19–22 ff.). At the north-west corner of Basin C a ditch was discovered running immediately in front of the main retaining wall but apparently at a slight angle to it. Only a small section of the ditch was cleared, and it evidently continued to the west and also to the east under Basin C. This ditch does not seem to be Mycenaean. The filling was homogeneous throughout, and yielded a good deal of late Classical pottery and tile fragments together with a lamp of third-century B.C. type. The ditch had clearly been filled in before the construction of Basin C, but perhaps only a short time before its construction and in connection with it. How far the ditch extended west and east, and what its original purpose may have been, are not clear; but it is just conceivable that it was dug to mark the boundary on this (north) side of the sanctuary of Hera that is assumed to have existed in this area (see p. 26–27).

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[8] See throughout this section the plan and sections in PLATES 12 and 13.

In the region behind the Fountain House, by contrast with the Fountain House itself and the ground immediately in front of it, there was remarkably little trace of occupation after the Mycenaean period. It is true that most of X with the structure of poros blocks had already been cleared in previous excavations down as far as the Mycenaean white clay plaster floors described below, while IV and VII had been bared to the rock. Even in those parts of the area where no excavating had taken place before, hardly any post-Mycenaean pottery was to be found, and Mycenaean sherds occurred freely on the surface. At a depth of only a few centimetres below the surface was a well-defined level marked by floors coated with white clay plaster. This level of white clay plaster floors could be traced right across the area from the east side of the curved wall α through III Ext E, VII and XIV to XIa–X–IX, where it appears running *c.* 0·10 m. below the bottom of the poros blocks, and is cut through by the later water channels connected with the Fountain House. In most places it was possible to distinguish two or three successive layers of white clay plaster floors separated by a few centimetres from each other and representing re-layings or repairs of the surface. In the south-east corner of XIa a shallow hearth pit, about 0·80 m. in diameter and 0·15 m. deep, lay immediately underneath the lowest of the white clay plaster floors. It was filled with black ash, together with some sherds and scraps of bone. On the south side of XIV a large irregular pit had been cut through the plaster floors from above. It yielded a good deal of pottery, all of it Mycenaean, and including some L.H. IIIC. A similar pit was detected in the section at the south end of VII.

Two short stretches of rubble walling (δ, ε) in the same horizon as the white clay plaster floors may conceivably belong with them; although in the case of wall ε at any rate this was by no means certain. This wall was 0·75 m. wide and was preserved to a height of 0·30 m. above the surface of the top white clay plaster floor. A cutting made on the south side of it revealed traces of at least four successive floors, of which the lowest appeared to run below the bottom of the wall, but the slight gap between the three uppermost and the face of the wall was not sufficiently pronounced to make it obvious that they did not go with the wall. It is possible therefore that there was here a building or buildings to which the white clay plaster floors belonged, and whose walls have been almost entirely removed by plundering for stone in later times. There was some evidence perhaps for such stone robbing, for example at ρ, where a break in the plaster floor was observed, and fragments of archaic pottery were recovered from below the level of the floor beyond the edge of the break.

In III at the same level as the white clay plaster floors immediately to the east, and evidently in use at the same time, was a surface of hard tramped earth abutting on the east side of the curved wall α. From above this surface of tramped earth, and especially from around the face of the curved wall, a great mass of pottery fragments was recovered. As this concentration lay immediately below the modern surface, the pottery was in small fragments. A good deal of it in IV had already been removed in 1939. From the examination made to date, it seems fairly probable that the deposit represents the remains of complete vases and not merely odd sherds. A large proportion of the fragments belong to finely painted small vases, notably stirrup jars and cups, decorated in the style of L.H. IIIB, but with an admixture of L.H. IIIC. With the pottery in this deposit were many pieces of L.H. III clay figurines, mostly female figures of the usual types, but including some fragments which apparently come from chariot groups and the remarkable horseman published in Part V. This deposit appeared to continue over the plaster floors in VII, but whether the plaster floors here are in fact a continuation of the tramped-earth surface in III is not clear. There may have been a wall now destroyed dividing them, and the tramped earth may represent a surface outside the hypothetical building to which the plaster floors belonged.

This tramped-earth surface bearing the pottery deposit ran up to and abutted on the lowest course of the curved wall, which is clearly contemporary, as the pottery-bearing surface did not continue beyond the wall to the west. Only one or two courses of the curved wall are preserved: it may have continued to the north-west, but all traces of it here have disappeared. Whether some of the walling at 3 has any connection with it, or whether all of this belongs to a later period of construction, is not clear. As the contemporary tramped-earth surface runs up against the bottom of its lowest course, the curved wall evidently has no sunk foundations, and cannot therefore presumably have been built to any great height or been intended to support any considerable weight.

It was most noticeable that the deposit of pottery and the tramped-earth surface did not continue west of the curved wall. Indeed, from this area west of the wall very little pottery of any kind was recovered. The rock is here close to the surface, and suddenly dips down at a steep angle forming a kind of cliff, which is evidently the continuation of the cliff that appears above ground beyond the present motor road immediately to the north (see Plan above, Report, FIG. 1, p. 2).

Farther north in VIa a sounding was made down the edge of the cliff, revealing at a depth of one and a half metres below the cliff edge the top of what appears to be the same clean rock fill as was met at a considerably higher level in V. This rock fill was here capped, not by a layer of white plaster as in V, but by a band of stiff green clay about 0·15 m. thick. Above the green clay band was a deposit of brown earth, apparently not an artificial fill but the effect of natural wash, and presumably a continuation of the brown earth above the layer of white plaster in V. From this brown earth a good deal of Mycenaean pottery of all three periods was recovered, but nothing later.

Below the level of the tramped-earth surface and of the plaster floors east of the curved wall was a fairly uniform fill which appears to represent debris from the ruins of houses with walls of mud-brick. The trenches III Ext E, VII, XIV, and XIa were continued down to the rock, which lay at an average depth of a metre below the modern surface. Here and there (at the south end of VII and in XIV) built on or just above the rock, were flimsy rubble-wall footings, only a single course deep and about 0·40–0·45 m. wide. In XIV, below the wall footings which partly covered it, and evidently belonging to an earlier dwelling or phase of occupation, was a hearth pit dug to a depth of 0·25 m. into the rock and 0·60–0·70 m. in diameter; it was filled with black ash. From this hearth pit, and from patches immediately above the rock elsewhere, the sherds recovered were entirely of a Middle Helladic character. It is possible therefore that occupation in this area goes back to the Middle Bronze Age. From the fill as a whole, however, below the level of the white clay plaster floors down to the rock, along with M.H. type plain wares several scraps of painted pottery of early L.H. appearance were recovered.

Near the north edge of the hearth pit in XIV begins one end of a shallow rock-cut channel, about 0·30–0·35 m. wide, whose continuation can be traced westwards through VII and III

Ext E as far as the curved wall and even beyond it for a short distance; but it is here very shallow, and soon vanishes. To the north in VII another channel roughly parallel to this runs into or is cut by the edge of a pit on the west side of the trench. A similar rock-cut channel in X seems to run into the pit ν. Pit ν is more or less circular, about 0·70–0·90 m. in diameter at the top, and cut to a depth of 0·80 m. below the surface of the rock, with curving sides and a flat bottom. It was filled with earth and large stones, yielding a little pottery and a few scraps of bone: the pottery included one fine sherd of L.H. I–II decorated with a double axe. Just north of pit ν was a small hole dug in the rock; and similar small holes occurred in VII. The purpose of these various pits and holes is not clear. The rock-cut channels may be for drainage, although those in XIV and VII at any rate might be foundation trenches for a wooden house of the characteristic long and narrow Middle Bronze Age type. There was nothing, however, in the fill of the channels or pits to suggest the former presence of wooden beams or posts. On the other hand, it is worth noticing that a small patch of white clay plaster flooring immediately above the rock in the south-west corner of XIa appears to run up to, but not across or beyond, the rock-cut channel there. The eastern continuation of this floor and channel have been destroyed by the earlier trial trench, and were not noticed on the other side of it.

The shallow rectangular pit π, 1·40 m. long and 0·80 m. across, cut 0·15 m. deep below the surface of the rock, may be a plundered ‘ shaft grave ’ of M.H. type. Another possible grave may be represented by the deeper rectangular cutting ο. If so, it was presumably robbed during the Classical period, since its filling was practically indistinguishable in its appearance and in the type of pottery it yielded from that of the neighbouring foundation trench of the Main Basin A of the Fountain House.

The well ξ in XIa was 1·20 m. in diameter, and was traced down to a depth of 6·65 m. It is just possible that it was dug and used during the Mycenaean period. The great majority at any rate of the numerous sherds recovered from it were L.H. III, but the filling of earth and large stones appeared to be homogeneous throughout, though from the last metre or so below the top of the filling came several Geometric and Archaic sherds. The well was in any case filled in before the building of the structure of poros blocks, although it may have been closed in connection with that event, since the top of the well filling came up to the level of the bottom of the poros blocks which ran over it.

A. Provisional Interpretation

The following provisional interpretation is offered for the evidence so far obtained. The ground in this region originally represented a ridge running down westwards from the Lion Gate corner of the Acropolis, with its crest more or less on the line of the modern aqueduct (along the bottom edge of the Plan, PLATE 12). On the west this ridge ended abruptly in a steep cliff, forming the side of a sort of gully, beyond which to the west lay the knoll with the newly discovered circle of Shaft Graves. The ridge in our area was evidently on the outskirts of the Middle Helladic and early Mycenaean settlement, and has yielded evidence of flimsy dwellings of that period, and perhaps of burials.

The walls β and γ which show above the modern surface are clearly subsequent to the period of the white clay plaster floors, and may belong to the Classical period or later. They look more like terrace walls than house walls. The structure of poros blocks in X must certainly date from the Classical period. But the almost complete absence of Classical and later pottery from this region, contrasting with the profusion of Classical and Hellenistic pottery and tile from the ruins of the Fountain House itself and from the whole of the area excavated to the north between the Fountain House and the modern road down to the rock, suggests that the space behind the Fountain House was open ground at this time. Can it have been an *abaton* associated with that shrine of Hera whose boundary was once marked by the inscribed stone later used to divide Basins B and C of the Fountain House?

B. Stratified Deposits connected with the Fountain House

From the area of the Fountain House itself, and from the strip of ground between it and the modern road to the north, the mass of the pottery recovered was of the Classical period (fifth–fourth centuries B.C.) or later. It was noticeable that no sherds were recovered from this area that could be assigned to a period (Archaic or Geometric) between the end of the Bronze Age and the fifth century. Some Mycenaean sherds occurred everywhere mixed with the later pottery, but no distinct Mycenaean deposit was detected, although a considerable part of the area (indicated on the Plan) was excavated to the rock. Selected datable sherds were brought to Athens, where Professor Homer Thompson, Miss Lucy Talcott, and Miss Virginia Grace kindly examined them.

There were four main deposits which bear upon the date of the Fountain House.

(*aa*) Fill of earth containing fragments of green ' Classical ' tile, together with numerous poros chips, which may represent waste from the dressing of the poros blocks used to construct the Main Wall on the south side of the Fountain House. This deposit was considerably below the level of the successive floors of the Fore Basin A, and must therefore date from the period of construction of the Fore Basin or earlier.

Four lots of sherds were examined. The sherds which came from the very bottom of the deposit immediately above the rock, were of ' the late fifth century, or very beginning of the fourth '. The material from the other three lots could all be assigned to the fifth or fourth centuries (including black glazed ware, two sherds of R.F., a lamp nozzle ' of the fourth century rather than the fifth ', and ' one handle probably fourth century '), with the exception of a single kantharos handle of third-century date.

(*bb*) Deep cutting beyond the north-west corner of the Main Basin A. This cutting may be a trench dug for the foundations of the walls of the Main Basin A; but it appears to continue westwards on the line of the front wall of the later Basin B. The fill of the cutting must in any case date from the period of construction of Basin A, whose wall foundations descend into it.

Two lots of sherds were examined. In the first lot, apart from some Mycenaean, there was ' nothing that need be later than early fourth century, with the exception of one small piece of black-glazed ware which could be from a third-century kantharos '. The second lot included coarse red ware and black glazed ware, with a lamp fragment of ' about mid-fourth century ', but ' nothing later '.

(*cc*) Small cutting made below the floor of Main Basin A. This deposit must clearly date from before the construction of Basin A.

The scanty finds included ' one piece of Corinthian yellow conglomerate tile '. The few sherds were ' probably fourth century ': there was ' nothing characteristically Hellenistic '.

(*dd*) Ditch at north-west angle of Basin C (see p. 22). This ditch continues under Basin C, and had clearly been filled in before its construction. The material from the fill of the ditch should therefore date from the period of construction of Basin C or earlier.

Two lots of sherds were examined. The first lot included material from the upper part of the fill, and there is therefore some slight possibility of contamination with later material from the ruins of the Fountain House. It yielded ‘ nothing later than the second century ’. The second lot, from the lower part of the fill, contained black glazed ware and a ‘ brittle-ware lamp Type 9 ’ which is of the third century.

The unstratified pottery from the ruins of the Fountain House included sherds of the third and second centuries B.C. The latest identifiable sherd was a fragment of a ribbed Megarian bowl which was ‘ probably of the late second century, possibly early first century B.C.’

The evidence of the pottery suggests that the whole of the Fountain House complex dates from the third century B.C. or later: although the rarity of any sherds later than the fourth century from the deposits that can be assigned to the period of construction of the Main Basin A or before it may indicate that the first building here goes back to the very beginning of the century. The predominance of fifth- and fourth-century sherds in these early deposits denotes an intensive occupation of some kind in the area at that time. This may have been connected with activity at shrines, for whose presence there is other evidence (p. 30 ff.).

The absence of any sherds that could be assigned to a period after the very beginning of the first century B.C., suggests that the Fountain House had gone out of use, and that all occupation had ceased in this region, by about 100 B.C. or not much later.

M. S. F. H.

4. The Boundary Stone from the Perseia Fountain House

The smaller or western basin of the Perseia Fountain House was divided in two by a large, nearly rectangular, stone block laid on its side. This block is 0·96 m. high, while its slight taper gives it a width of 0·26 m. at the top and of 0·30 m. at the foot. It is about 0·11–0·15 m. thick. The surface is rough-picked, and is inscribed at the top of one face (FIG. 5), in letters which vary in height between 0·045 m. and 0·065 m.[9]

ΟΡΟΣ
⊟ΕΡΑΙΑΣ[10]

It had, therefore, served originally as a boundary marker of the precinct of Hera before being re-used in the Perseia basin, and the indication of the letter-forms of the inscription is that it was inscribed in the early part of the fifth century B.C. (*c.* 500–480), antedating by a generation, or slightly less, the destruction of Mycenae by the Argives.

The alphabet used shows no divergence from the type of archaic Mycenae. The closed form of the aspirate, ⊟, survived in Argos and Argolis through the fifth century, and appears on an inscription of *c.* 400 B.C. from the Asklepieion at Epidaurus (*IG* IV² i 40/41) still in association with tailed Ρ.[11] The squared-off forms of Α and Ε, on the other hand, give some indication that the inscription may hardly be dated back to the sixth century. The Ε on the Phrahiaridas bronze (*IG* IV 492; *SEG* XI 299) is of a less developed character, though it probably does not antedate the horos-stone by many years and seems to belong at the end of the sixth century. The same is true of *IG* IV 493 (*SEG* XI 300), and this, too, may be assigned to the turn of the century.[12]

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[9] Measurements approximate only, since the squeeze from which they were taken may have been liable to shrinkage (*cf.* B. D. Meritt, *Epigraphica Attica* 41). The squeeze has been deposited in the collection of the Museum of Classical Archaeology, Cambridge.

[10] By a trick of the light, the surface of the stone gives the appearance in the photograph of a further sigma under the sigma of Ηεραίας. There is, however, no trace of any third line of the inscription visible on the stone or on the squeeze.

[11] The Argive memorial of the battle of Tanagra (*IG* I² 931/2, *SEG* X 407, Meritt, *Hesperia* XIV (1945), 134 ff., XXI (1952), 354) shows a remarkable variant ⊞.

[12] *Cf.* M. Th. Mitsos, *Hesperia* XV (1946), 116. For similar general characteristics *cf.* also the Argive *SEG* XI 305, of a comparable date.

The best parallel for the forms of the letters on the horos-stone, despite a rough appearance, is perhaps the (? dedicatory) inscription *SEG* XI 298, which was assigned by Mitsos to the first quarter of the fifth century, and, like it, the horos-stone should antedate *IG* IV 517.

The varying use of the aspirate reflects the uncertainty in this matter prevailing in the Argolid in the fifth century. There is similar variation, for example, in the Argive arbitration between Knossos and Tylissos of *c.* 450 (Tod, *GHI* I² 33; *SEG* XI 316)—Ηέρα but Ἐραίον in l. 16—, on a bronze hydria in New York (*SEG* XI 355) dated *c.* 460, and in two dedications of comparable date from Hermione (Ἑρμιονεύς in *IG* IV 684, but Ηερμιονεύς in *IG* IV 683). *Cf.* also (from nearby Aegina, and dating *c.* 450) *IG* IV 50, where the engraver inserted one H as an afterthought but omitted it elsewhere.

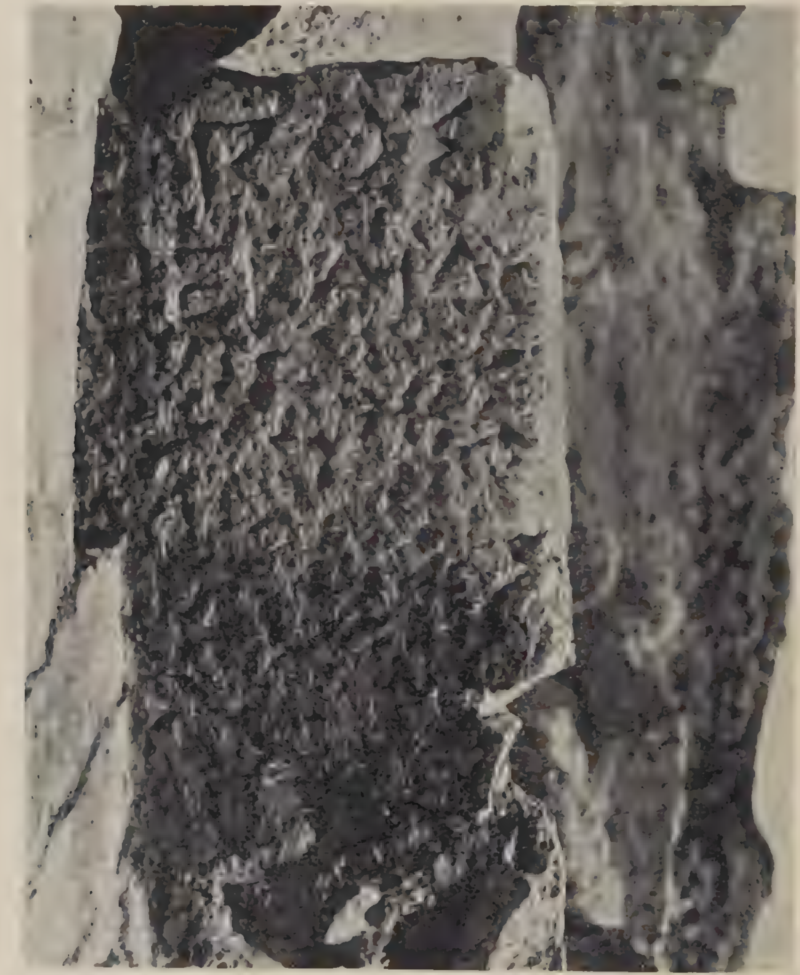

FIG. 5.—MYCENAE: BOUNDARY STONE FROM THE PERSEIA FOUNTAIN HOUSE.

I know of no parallel example of Heraia, an 'extended' form of the name Hera, which appears on this stone, though the comparable case of Athena and Athenaia is familiar, while an extended form in -eia, Persephoneia, is a regular epic alternative for Persephone. It is unlikely that Ηεραίας is an adjective, with (*e.g.*) γᾶς understood. The usual formula of such boundary markers consists of the name of the deity in the genitive case, with or without ὅρος, ἱερόν, etc.: where the expression is fuller, the name of the god is retained with the genitive ἱεροῦ, τεμένους, χωρίου, or the like. Examples of the god's name in an adjectival form apparently occur in *IG* II–III^2, 2609 and 2611, but there is in any case no ellipse of the word meaning ' precinct ' or ' territory ', and more probably the apparent adjective is the name of the precinct added in apposition. It seems preferable, therefore, to accept Ηεραίας as an equivalent of Ηέρας, and to regard the inscription as of the normal horos-type.

A. G. W.

5. History

The site being in an exposed position on the top of the ridge and close to the modern road has suffered much. It is therefore not easy to interpret the evidence for its history which our excavations have yielded.

The cuttings and channels and the rock-cut basin just east of the steps in the soft rock are presumably prehistoric, but no more exact suggestion about their date can be made. Above the rock M.H. and L.H. pottery was found, but there seems to be no satisfactory stratification, and the deposit is shallow. Directly below the steps there is a layer of white clay plaster which covers most of the area all around. What it means is not easy to see. It can hardly be a house floor, for there are no walls which seem to be associated with it. It is also difficult to explain the meaning of the well which underlies the steps at the north-west angle. One would hardly expect a well sunk at this point to produce water. Could it have been a reservoir to which water was brought in early days? Since the latest pottery found in its upper levels is Geometric and Orientalising, it presumably continued in use throughout those periods and went out of use when the steps were constructed. There is no evidence for the date of the steps except that they must be post-Mycenaean.

If we take the miscellaneous pieces of evidence into consideration we can arrive at the following tentative suggestions for dating the successive stages of the site.

1. M.H. and L.H. occupation, with possibly some form of water installation.
2. Classical. Building of steps with oblique south-east–north-west water channel on east side. Construction of long east–west stone water channel (now in front of Main Wall). Did Tsountas' inscribed poros base mentioning Perseus belong to this stage?
3. Hellenistic, third century B.C. The Main Terrace Wall was built. The south-east–north-west channel was cut and disused, and the north–south channel was made to bring water to the long east–west stone channel against which the Main Wall was constructed.
4. Hellenistic, second century B.C. Basins A and B–C were built and the water led into them by the east–west channel. Basin A might conceivably belong to Stage 3.
5. Late Hellenistic, first century B.C. or later (?). The floor of Fore Basin A was relaid, and Basins B and C were separated. It was at this stage that the Fountain House was seen by Pausanias among the ruins of Mycenae. The absence of sherds of a date later than the first century B.C. is not proof that the Fountain House had gone out of use by then, for the ruins had been excavated by Tsountas and again in 1922 and the pottery then found is lost. Pausanias, however, seems to have had no difficulty in recognising it as a Fountain House in the second century A.D.

A. J. B. W.

PART III. THE AGAMEMNONEION

(PLATES 17–23, PLAN ON PLATE 13*b*)

On Professor Wace's invitation I joined his staff on the Mycenae excavation in 1950 in order to undertake the testing of an area where Geometric pottery had been picked up in ploughland by the Mycenaean Causeway a kilometre S.S.W. of the acropolis. The soundings here reported were carried out in the first ten days of August at the place called Ayios Ioannis on the left bank of the Chaos watercourse, in a field which extends some sixty metres up from the causeway. On his plan of Mycenae Steffen marked considerable traces of ' Cyclopean ' buildings a short distance back from the stream bank, but these are no longer to be seen.

The first probe was made at a distance of about seven metres to the east of the abutment of the Mycenaean Causeway on the south bank. A very rough terrace wall or substructure on an alignment north-east by north was found at plough level and exposed for a length of four metres; it has a loose stone backing something over a metre thick and is preserved to a height of 80 cm. on the face. The wall is bedded in gravel, and being at the presumed level of the top of the causeway may have had some connection with the network of roads that radiated from it; below plough level a little plain L.H. III pottery was found.

The second test was made about thirty metres further upstream at a point where the crest of the stream bank is revetted by the remains of a stout rubble wall (FIG. 7, *a*); at less than half a metre below the surface fragments of archaic cups and terracotta figurines started to appear, together with some dispersed fragments of stone paving slabs, and the excavation was therefore extended in trenches to south, west, and north until the limits of this deposit were ascertained. While this was being cleared, the wall in the stream bank was investigated and found to be the north wall of an enclosure whose outline was further explored in the time available before the conclusion of the campaign. In August 1952 three more pits were dug by Miss E. B. Wace with a view to ascertaining the limits of the sanctuary and internal walls.

The long wall at the top of the stream bank (FIG. 7, *a*) is 1·25 m. thick; the exterior face and the top course or so of the inner face are built of biggish barely dressed stones, while the core consists of smaller stones packed in earth. The foundations of the wall rest on the gravel of the stream bank and go deeper on the streamward side; the outer face is *c.* 1·35 m. high. At the east end the wall turns inward at something less than a right angle, preserving its thickness of 1·25 m. for a distance of about 2·2 m. from the corner and then apparently narrowing to a rough footing only one stone thick. A gap in the wall on the east side not far from the north-east corner possibly marks the position of an entrance. The southern limit of this east wall has not been ascertained; trenching near this corner in 1952 showed no trace of a construction above the gravel, which was reached at less than a metre depth, and excavation was not continued to the south of this where the adjoining field lies at a rather higher level. At 17 m. from the north-east corner a cross wall of rubble with its top at the same level joins the north wall (FIG. 7, *b*); it is of the same width as the north wall and especially solidly built, and in the neighbourhood of this junction the north wall also presents a deeper and more solid foundation bedded in the gravel. This cross wall terminates in a roughly-faced butt end at a distance of 2·40 m. from the north wall; in the span of the trench excavated to the south of this wall-end no trace of a continuation of its line was found above the gravel, and a test a little further south in 1952 showed no sign of a wall on this line. Three metres to the west of this the face of a parallel cross wall was detected at the end of the 1950

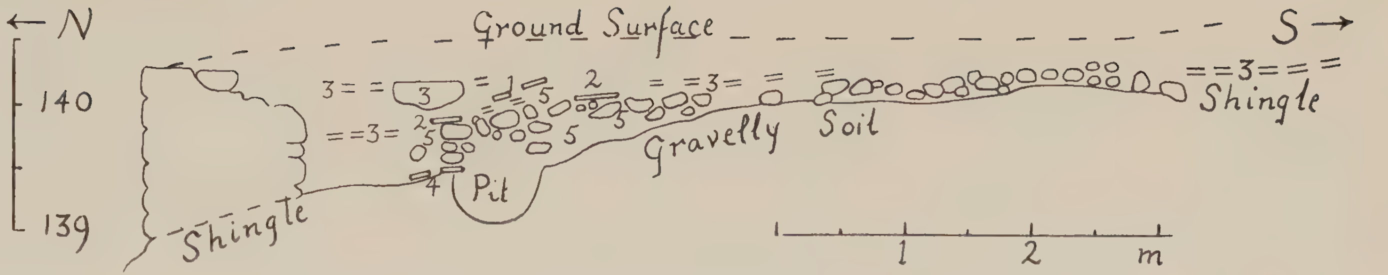
← N
S →
Ground Surface
140
139
Shingle
Pit
Gravelly Soil
Shingle
1
2
3
4
5
1
2
m

FIG. 6.—MYCENAE: AGAMEMNONEION, SECTION THROUGH CENTRAL AREA, A-A.

1. *Hellenistic tile fragments.*
2. *Schiststone pavement slabs.*
3. *Poros stones and chips.*
4. *Archaic tile fragments.*
5. *Area of archaic votives.*

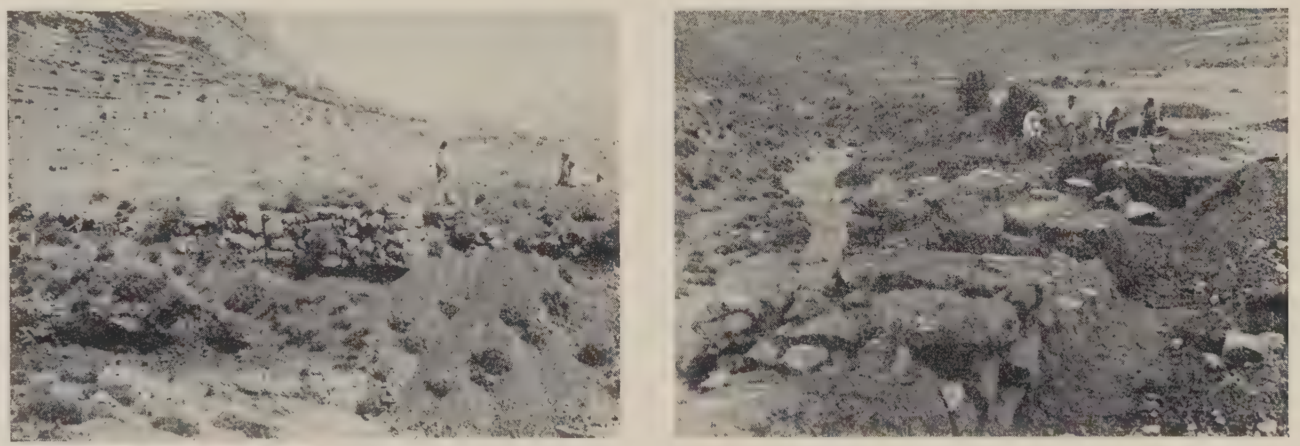
a b

FIG. 7.—MYCENAE: AGAMEMNONEION.
(*a*) *North retaining wall.* (*b*) *North side of Central Area.*

excavation. This was investigated by Miss Wace in 1952 and found to be another similar short wall terminating in a butt end on the south; fragments of tile and two pieces of paving slab were found on the west side of this wall also. The north wall is completely broken away in the space between the two cross walls, but traces of its core are again visible in the stream bank to a distance of 5·5 m. west of the missing corner of the more westerly cross wall. Where the face is not broken away, the tops of the different walls maintain a consistent level, with a slight downward slope from east to west; they were probably levelled at this height for a coping or superstructure.

A stone pavement was laid inside the enclosure in Hellenistic times at 20 cm. or less below the preserved top of the wall. It consisted of irregular slabs of a green schist, which was split in the mountain quarry and varies between 2 and 5 cm. in thickness. It seems as if it may have formed a loosely fitted crazy pavement, which, together with the wall-tops, sloped gently down from east to west. The floor in the area west of the easterly cross wall was at a rather lower level than that on the east; the natural fall of the ground westward must have been considerable here, since the filling, of made earth with few votives, goes down to a metre and more below the level of the Hellenistic floor. The paving was found still partly intact in patches against the inside of the north wall for a distance of two to three metres out (FIG. 7, *b*). The inner face of the wall continued down for a considerable distance below the pavement level, but the flimsiness of its lower courses and the consistency of the earth packing against the face render the existence of an earlier floor at a lower level unlikely. The pavement is clearly Hellenistic in date, since fallen Hellenistic tiles lay jumbled at the same level, while odd fragments of archaic tiles seem to have been incorporated in the pavement, and pottery of the fifth century (with black-glazed kotylai apparently of the fourth) were found sealed beneath it. The body of a Hellenistic fusiform unguentary and a small scrap of perfunctory West Slope ware were also found, the latter apparently somewhat below the late pavement level but not sealed under it; the fragments of an inscribed basin (J 3, below) seem to have overlain the Hellenistic pavement level. Professor Wace judges the wall in the stream bank to be archaic on account of its stylistic resemblance to that of the temple terrace on the acropolis.

The significance of these walls is not yet clear. In view of its irregular form and the slightness of the footing on the east side the paved court cannot have been roofed over in the middle; it is probable that there was some roofed structure on the west, where Hellenistic tile fragments lay thick on the ground among fallen stones around the cross walls. But there was no trace anywhere of fallen or decomposed mud brick.

The stone pavement rested on a made earth fill in the northerly zone of the excavated area against the long wall, while in the south and east it seems to have been laid directly on the gravel or on a shallow layer of loose stones overlying the gravel. But in a belt not exceeding seven metres long (east to west) and four metres broad irregular patches of stone pack were found beneath the level of the later pavement, and the bulk of the archaic deposit came to light in the gaps (PLATE 13, *b*), and in places crushed beneath this packing. Mixed with the archaic deposit were iron nails and bits of carbonised wood. Chunks and chips of decomposed soft white limestone or poros were found forming a distinct stratum resembling builders' waste at the level of the top of the packing and of the stone pavement. At one point between the stone packing and the made earth fill against the north wall an oblong barbecue pit of 1·40 by 0·75 m. had been sunk to a depth of about 50 cm. into the gravel; it was filled with loose dark earth containing some ash, animal bones, and pottery, including a fifth-century black-figure skyphos (E 5). Before the laying of the pavement the pit had been partly covered with a stone packing in which several pieces of a hopper quern were incorporated. The archaic deposit itself gives every appearance of having been deliberately transported into this position; the majority of the figurines and baby kotylai were found near the east end of the deposit, while the more or less undamaged kantharoi were mostly packed close together, and sometimes inside one another, in the west part. Odd sherds and fragments of figurines were found in the earth in other parts of the enclosure, but did not form a regular stratum outside the central belt of the deposit area. The large vases, and especially the Late Geometric ones, were for the most part badly broken before the transference, and almost all the figurines were incomplete.[1]

The enclosure was a public one at the time of the Hellenistic remodelling, as is indicated by the inscribed tiles[2]; and the presence of some dozens of archaic tile fragments indicates that it had a precursor close at hand. There is no reason to doubt that the earlier construction, with which the votive deposit must be associated, was a sacred one going back probably into Late Geometric times; and the public enclosure of Hellenistic times is therefore likely also to have been a *temenos*. Despite the number of archaic figurines of the goddess the cult was undoubtedly a male one; for rider figurines, both armed and otherwise, are also numerous, and the pedestal-kraters and large kantharoi are appropriate to the needs of a male being. The constant offering of pedestal-kraters—or *louteria*—in fact suggests a hero; and fortunately we are in a position to identify the recipient as one to whom these vessels—if they were, as is commonly asserted,[3] receptacles for bath-water—would have been almost embarrassingly appropriate. The identification rests on the fragments of inscribed vases of the fourth century and later (J 1–3), which cannot be otherwise interpreted than as dedications to the local hero Agamemnon. The cult seems to have originated in the Late Geometric era, at a date (to judge by the Protocorinthian wares found here, pp. 50 f.) about the close of the eighth century. It seems to have been a not insignificant cult, in the earlier archaic period at least; for though fine bronzes and ivories are lacking among the dedications, the vases compare favourably with those found at other sanctuaries in the Argolid.

The existence of a heroön of Agamemnon by the old bridge at Mycenae is somewhat surprising in view of Pausanias' testimony (II xvi 6) that the graves of Agamemnon and his followers were pointed out inside the walls. An independent cult of a hero a bare kilometre away from his known tomb is hardly to be contemplated, and the cult by the causeway therefore implies the absence in Hellenic times of any local tradition of the position of Agamemnon's tomb. The date at which the cult originated is also of interest. It seems to fall about the end of the eighth century and to coincide approximately with the institution of the cult of Menelaus and Helen at Therapne. Together with the introduction of Homeric burial customs in Attica and the institution of Hellenic cults at Mycenaean tombs in Attica and the Argolid, the foundation of the cult at the Agamemnoneion seems to have been engendered by a new interest in the epic heroes, and to be directly caused by the arrival of an epic on the mainland of Greece which was powerful enough to alter people's habits. It seems in fact to be the response to the arrival of the Iliad.[4]

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[1] Since the whole material was brought to Athens for study and re-examined after the different wares and vases had been segregated, it is certain that most of the large vases were in a very fragmentary state when they were laid in position. The absence of stratification in the archaic deposit is confirmed by the presence of later archaic wares (*e.g.* the lydion H 5, of the second half of the sixth century) at the bottom under the stone packing.

[2] Δαμόσιος on the tiles, as opposed to ἱερός (administered by trustees), *cf.* Wace, *BSA* XV 113. The *demos* is the Argive, and the remodelling of the sanctuary may have taken place soon after the settlement of Mycenae as an Argive κώμα in middle Hellenistic times (*cf.* Boethius, *BSA* XXV 422 f.).

[3] *Cf.* Wolters, *JdI* 1899, 128 ff. on the *louteria* in the hero-cult at Menidi; Nilsson, *Minoan-Mycenaean Religion* (1950), 603.

[4] I have argued this view in the forthcoming volume of studies, Γέρας Αντ. Κεραμοπούλλου, 112 ff.

THE FINDS

The bulk of the archaic deposit covers a range of about two and a half centuries. The dedications seem to have begun about the end of the eighth century and continued in a steady stream until the early fifth century. Some red-figured and black-glazed vases of the later fifth and fourth centuries were found in the deposit, but they are few in number, and may represent no more than two or three isolated sets of offerings. The remodelling of the sanctuary in Hellenistic times is attested by the series of inscribed tiles, but other finds of this era are very slight.

The vases in the archaic deposit consist mainly of kraters and drinking cups—offerings suited to the appetites of a male being—and thus give an incomplete picture of archaic Argive forms.[5] They do, however, sensibly supplement our knowledge of Argive vase-decoration in the archaic period. The Late Geometric figured style, which was in its prime at the end of the eighth century, now appears more clearly as a retarded mode which was still dominating Argive painting in (and probably after) the middle of the seventh century. Individual Orientalising elements creep into the painter's repertory (*e.g.* A 18), and there are faint suggestions on other sites of isolated attempts to convert the Late Geometric style into a medium of narrative[6]; but there is no consistent Orientalising style in the Argolid. In the late seventh and sixth centuries the ornamentation was normally confined to simple floral and linear motives. The Early Black Figure fragment E 1 (PLATE 17, FIG. 30) was almost certainly produced in the Argolid and shows an unexpected interest and skill in the use of Black Figure; but this likewise appears to be an isolated apparition. Argive potteries may have played an undistinguished part in the production of cheap ware of Corinthian types and of late red-figured (and possibly of black-figured) vases; but if so, it is not possible to distinguish their products with any degree of confidence. In the fourth century they shared, within the sphere of Corinthian influence, in the manufacture of unpretentious black-glazed ware. Coarse domestic wares are hardly represented in the deposit. Imports are confined to Corinthian and some Attic, with a single East Greek lydion (H 5).

The figurines are with one exception (I 10) manufactures of the Argolid, though the mould-made heads may derive from Corinthian prototypes. With the exception of the unusual annular fibula L 2, the metal objects are of little interest; they include no specimens of Argive figured bronzework.[7]

A. GEOMETRIC POTTERY

Pedestal-kraters.

1–30. The only Argive form with Geometric decoration recognised on this site is the krater with upright collar, stirrup-handles, and a conical pedestal; fragments of some sixty such vases were found. The stirrup-handled krater is a well-known Geometric form,[8] appearing (in Attica at least) as early as the ninth century; it is not uncommon in the Argolid, though hitherto not in association with the pedestal foot.[9] Many of the pieces from Mycenae are of considerable size, a few fragments coming from vases with a maximum diameter of more than 75 cm. In nos. 5–7 the maximum diameter exceeds 60 cm.; nos. 1–3 are under 40 cm., and the remainder fall within these limits. In addition a few insignificant fragments of smaller vases were found; they seem also to come from kraters. Apart from a single large knob in this ware there is no evidence of lids. The handle normally consists of a single arch from whose apex the bridge springs; the less common Geometric form, where the bridge springs from the junction of twin arches, is represented only by a single example

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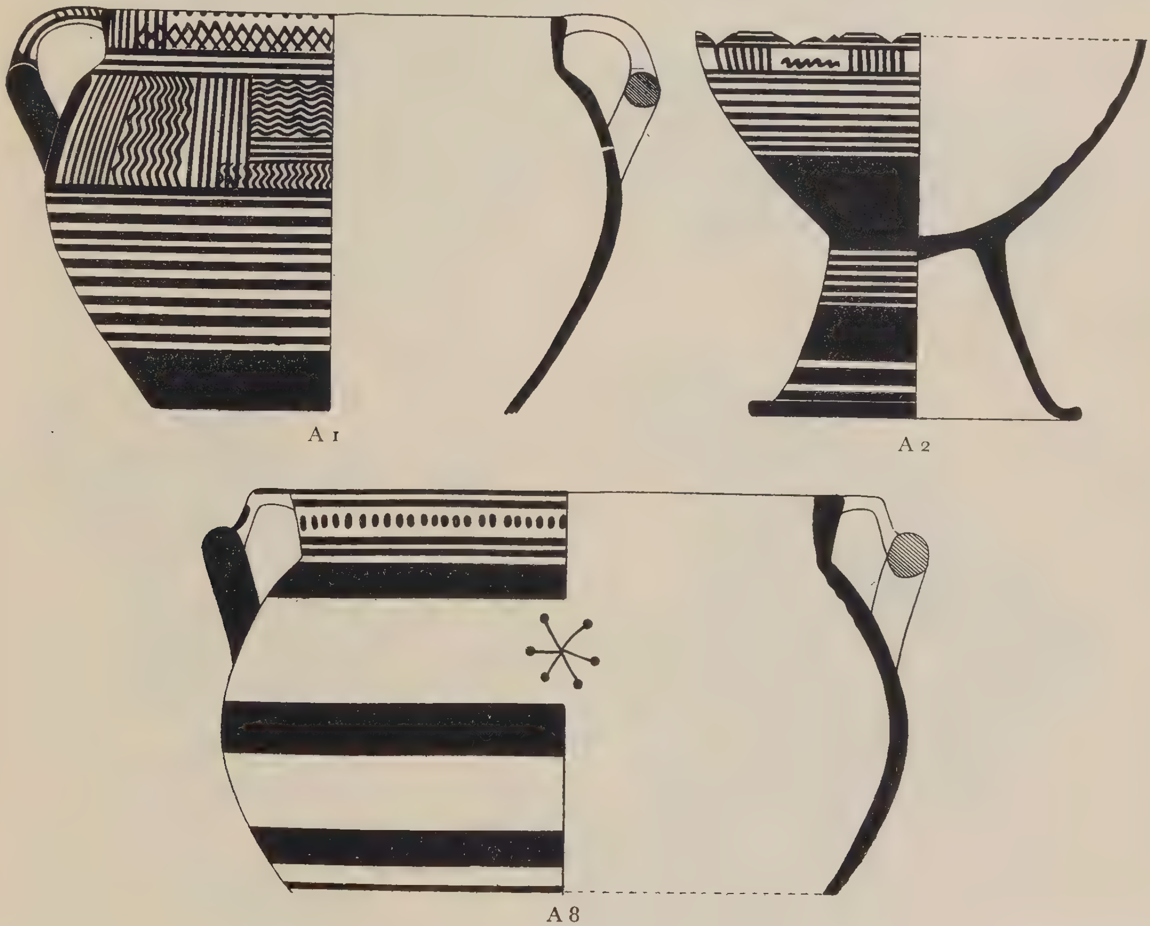
[5] Hence also the scarcity of handmade monochrome ware, in contrast to the Argive Heraeum (cf. *Hesperia* XXI, 202 ff.).

[6] E.g. *AH* II, pl. 60, 19, the Tiryns shields (cf. *BSA* XLIII, pl. 18A), and perhaps the pedestal vase *AH* II, pl. 67 (*BSA* XXXV, pl. 52), which may be Atticising (as S. Karouzou *ADelt* XV 48 n. 1) rather than Attic.

[7] The drawings of all finds in this article are by Miss E. A. B. Petty.

[8] Though rare in Athens (where the bridgeless double-arch handle of the Dipylon kraters was dominant in the eighth century) and in northern Ionia, the stirrup-handled krater seems to have been a recognised Geometric form in Corinth and the Peloponnese, Aegina, Ithaca, Euboea, the Cyclades, Rhodes, Samos, the Aeolis, Crete, and Cyprus.

[9] It is perhaps a vessel of this form that is depicted, together with other paraphernalia of cult, on the sherd from the Argive Heraeum *AH* II, pl. 60, 19*b*, *BSA* XXXV, pl. 26, 2.


A 1

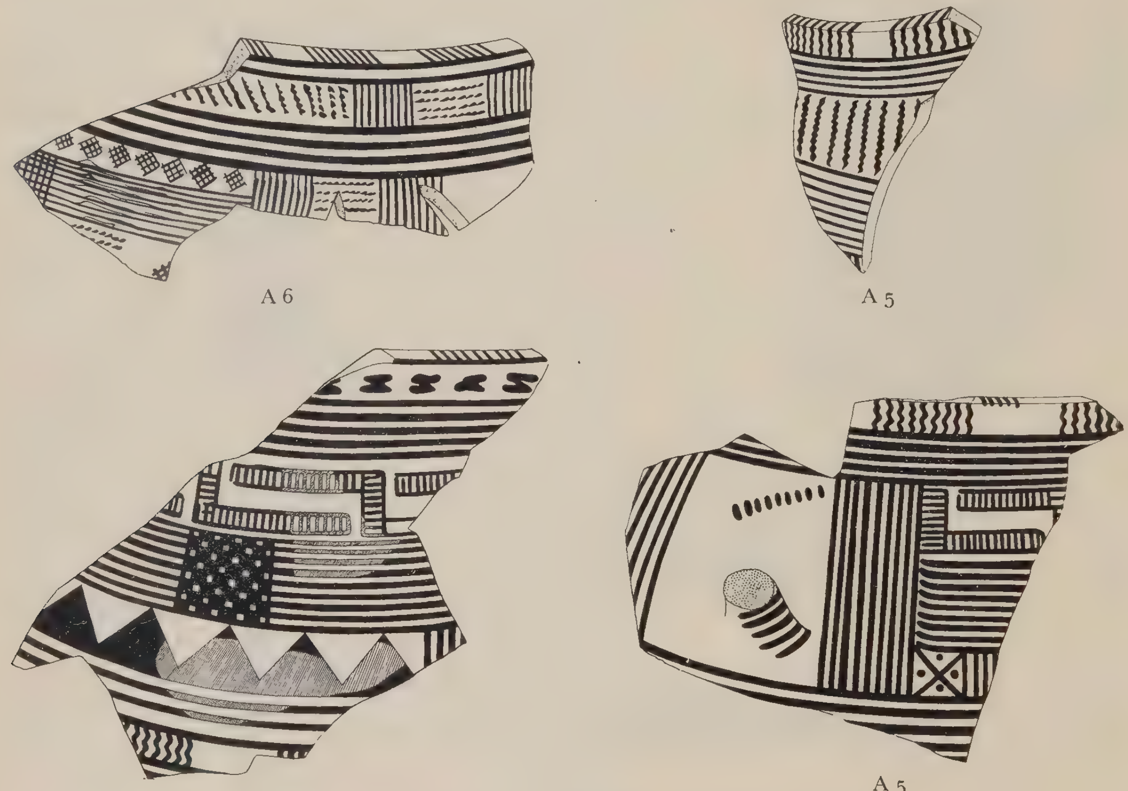
A 2

A 8

Fig. 8.—Late Geometric Pottery.
Scale 1 : 4.

(no. 16) but is attested by several fragments of miniature kraters (p. 40). The lower body of these kraters is decorated with horizontal stripes and bands. The pedestal splays out at the bottom; it is not normally perforated (no. 27 is a rare exception), but sometimes it has grooved rings at the top; zones of ornament, which seem to occur on the majority of pieces, are not divided into panels but run continuously round the pedestal (fig. 13); in addition to geometrical patterns, files of birds and (on a fragment not illustrated) horses are found in the main zone.

The clay is usually a warm buff, devoid of mica; the glaze is dark brown or dull black, sometimes reddening and never really lustrous. On some pieces the clay is greenish and fired less hard, and bears a matt black glaze; though it can be matched elsewhere in the Argolid, this green Corinthian-like tone seems especially at home at Mycenae and characteristic of the seventh-century Geometric kraters (*e.g.* nos. 7, 14, 15); intermediate pieces are found in which the clay is pale but not greenish, and there seems in fact to be no essential distinction between the buff and greenish ware. The use of added colour is not customary among the fragments from this site, but a piece of rim from the 1952 excavation on the site and a fragment previously found in the vicinity of the Mycenaean Causeway (now in the British School at Athens) show a single-line meander of simple type in white paint on the collar. The interior of the smaller kraters, and of some of the medium-sized ones (nos. 1–3, 11, 13, 15, 19), is glazed; on the larger vases the interior is plain except for a glazed stripe on the rim and occasional bands in the bowl.


A 6

A 5

A 7

A 5

Fig. 9.—Late Geometric Pottery.

Scale 1 : 4.

This group of vases presents a more consistently late appearance than any other Argive Geometric series. A few pieces of buff ware (*e.g.* nos. 1–4) display the tightness of form and

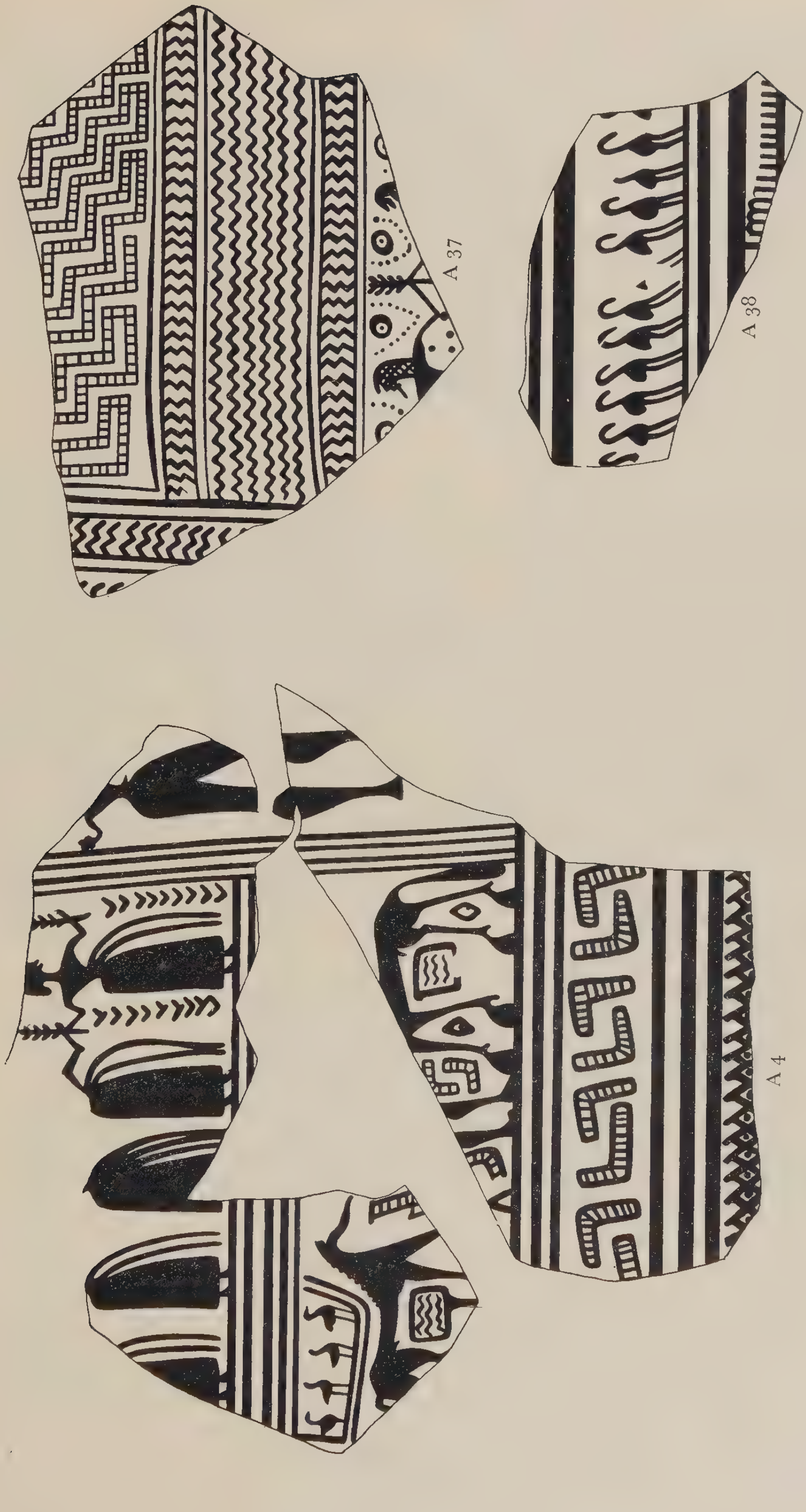
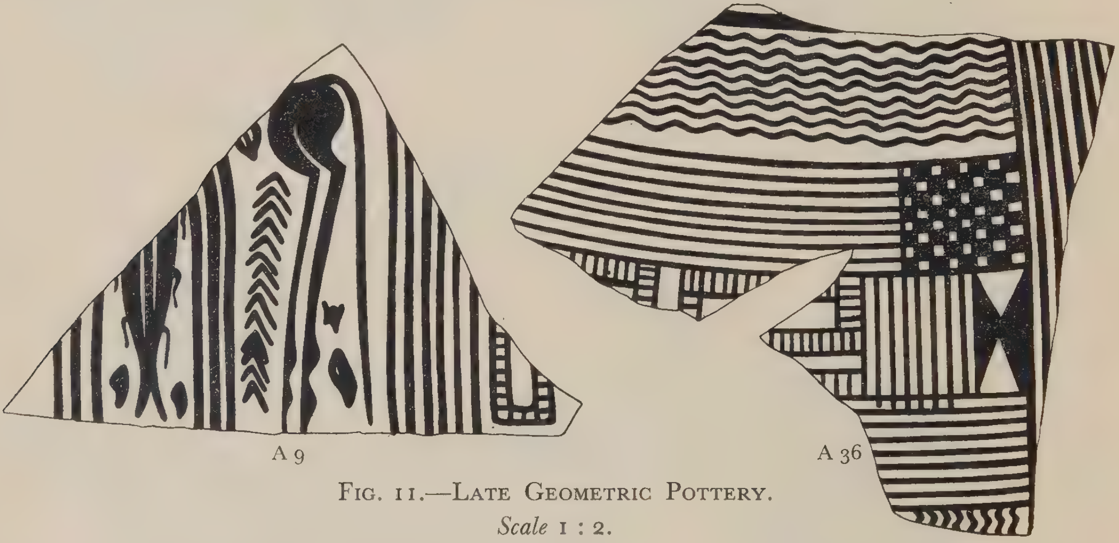


FIG. 10.—LATE GEOMETRIC POTTERY.
Scale 1 : 2.

compact ornamentation which mark the Argive Late Geometric style elsewhere[10]: among these pieces there are decorative elements which recall kotylai of the end of the Early Protocorinthian period (shallow panels with wavy-line ornament as no. 2, wiry birds—similar to those of B 3—on the shoulder of a krater which resembles no. 1); it therefore seems likely that the earliest of the Late Geometric kraters in this deposit are approximately contemporary with the earliest Protocorinthian fragments found here and date to about the last years of the eighth century. The majority of the Late Geometric here comes from large vessels more relaxed in form, with a high collar often beaked at the rim and forming a curve with the shoulder, and freer in the arrangement of the ornament; it could perhaps more properly be called subgeometric. The later figured style is dominated by the horse and fish; the painting is sloppy, or at best rakish (*e.g.* nos. 9–10, 12–13); the filling ornament loses all stability, and the firm bounding lines of the field come to be replaced by a mattress of horizontal or vertical wavy lines. Sometimes the greater part of the body of the vase is girt by layer on layer of toneless bent-line ornament (*e.g.* no. 12), and in the subsidiary decoration the Geometric contrast of dark line and light ground tends to give way to an even texture of light and dark in which the focus is lost.[11] A number of specific motives and details point to a seventh-century date; characteristic are the isolated rosettes (no. 8), the frequent solid rays, a solid


A 9

A 36

FIG. 11.—LATE GEOMETRIC POTTERY.
Scale 1 : 2.

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[10] For Argive Late Geometric *cf.* Mycenae: Schliemann, *Mycenae* 103, pls. 14, 20 f.; *JdI* XIV 85, figs. 43 f.; *Tiryns* I 145 f., figs. 9 f.; *AE* 1912, 131 ff. figs. 1 ff.; Wace, *Mycenae*, pl. 106; unpublished in Nauplia museum and BSA collection. Argive Heraeum: *AH* II 117 f., figs. 42 f., pls. 56 ff.; *Tiryns* I 114, fig. 45; *AE* 1937, 385, fig. 9, 389, fig. 14; *AJA* XLIII 434, fig. 22, 441, fig. 30; *Hesperia* XXI, pl. 50; unpublished in BSA collection. Tiryns: Schliemann, *Tiryns* 95 ff., pls. 16 ff.; *Tiryns* I, pls. 15, 19 f.; Hampe, *Sagenbilder* 66, fig. 27; unpublished in BSA collection. Asine: *Tiryns* I 148, fig. 14; Frödin-Persson, *Asine* 317 ff., figs. 218 ff.; unpublished in BSA collection. Troezen: Welter, *Troizen u. Kalaureia*, pl. 27. Kalauria: *AM* XX 317; unpublished fragment in BSA collection. Lerna: Caskey in Γέρας Κεραμοπούλλου. Argos, Berbati, Kandia: unpublished fragments in BSA collection. Aegina: Furtwängler, *Aegina*, pl. 125; Kraiker, *Aigina*, pls. 4 f.; unpublished in BSA collection. Corinth: *Corinth*, VII pl. 22, no. 154. Perachora: unpublished. There is also Late Geometric of Argive appearance from Tegea (*BCH* XLV 407 ff., figs. 54–58), Melos (*Tiryns* I 147, fig. 13) and from seventh-century graves in the Fusco cemetery at Syracuse (*NS* 1893, 477; 1895, 135–186). Late Geometric has since come to light in 1952 in French excavations at Argos and in a chamber-tomb cleared by Dr. Papademetriou by the new Shaft Grave Circle at Mycenae.

[11] A similar tonelessness is characteristic of much Attic subgeometric of the seventh century; it became prevalent in Athens in the advanced Late Geometric (e.g. *AA* 1938, 438, fig. 73).

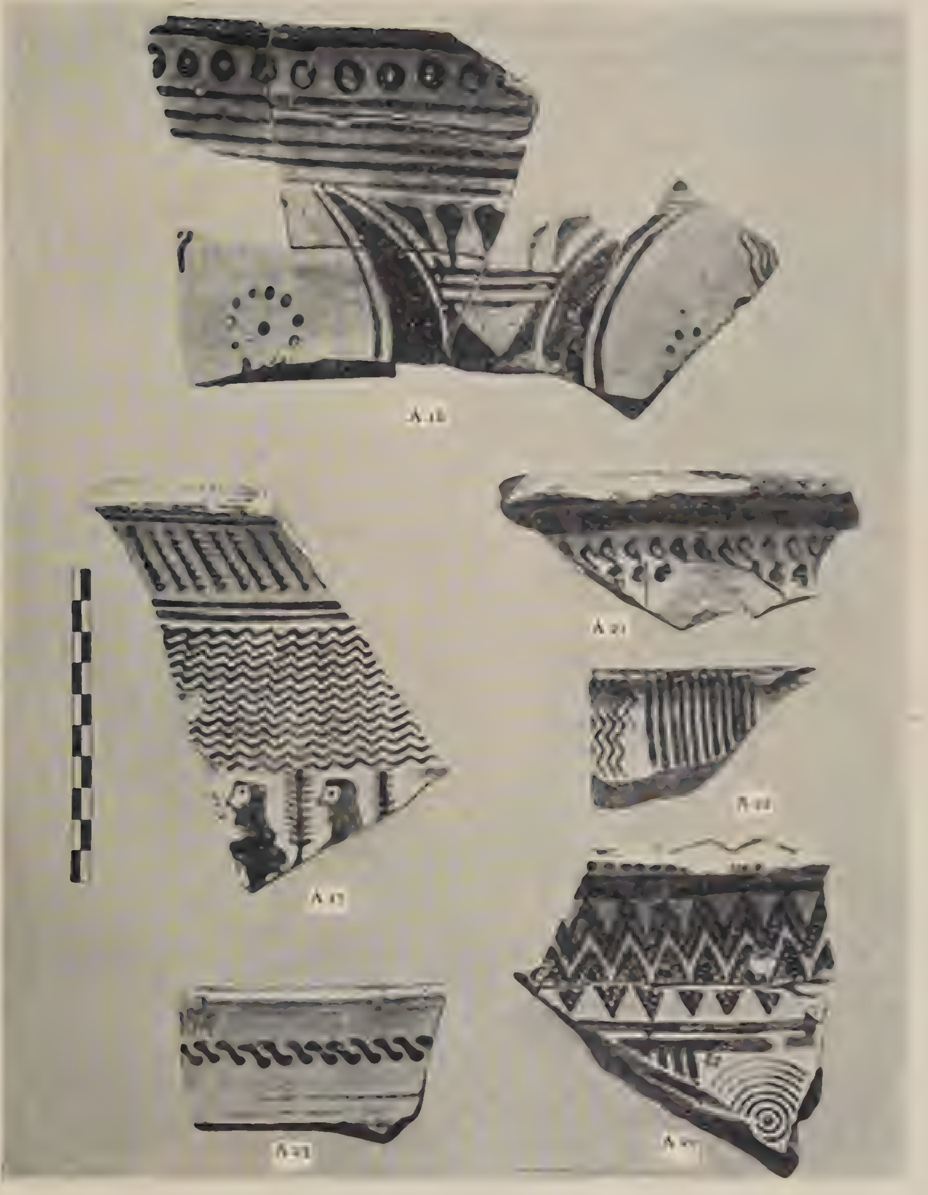

Fig. 12.—Late Geometric Pottery.

key-meander (not illustrated), bands of angular running dog and *zeta* ornament, the outline painting of human faces (no. 17) and horses' heads (nos. 10, 12). The lotus of no. 18 is not easily matched in Attic and Corinthian painting; the fullness of form demands a date not much before the middle of the seventh century, while the high-set, straight line on which the heads rest is hardly consonant with a much later date. This Late Geometric series should therefore range from about the last years of the eighth century to the middle or third quarter of the seventh.[12]

1–18. Bowls. No. 3: on collar, bird, opposing triangles; on shoulder (horse), two women, horse and fish; on belly, stripes, zigzag, stripes (not illustrated), row of dots, stripes, glazed band to bottom of bowl. No. 5: on shoulder, meander on front, vertical wavy lines on back. No. 7: greenish ware; fragments in Nauplia Museum Inv. 2589 (chance finds from ' beyond Cyclopean Bridge ', Mycenae) may come from the same vase. No. 8: pale but not greenish ware; for the rosette cf. *AH* II, pl. 56, 10. No. 9: horse, fish enclosed in a canopy perhaps denoting water (*cf.* the Jordan in Byzantine representations of the Baptism). No. 10: horse and fish; for the style of the drawing, cf. *AH* II, pl. 57, 1. No. 11: wavy lines, open dotted meander, stripes, glazed rays. No. 12: on body, man with hair in outline holding horses with outline face, birds and fishes; for the envelope of dots round the fishes, *cf.* Würzburg 63, Langlotz pl. 5; fragments (not illustrated) from the lower body show that there were further ancillary bands of bent-line ornament below those on PLATE 17. No. 13: pale ware; horse and fish; reserved: two rings on circles, crack between horse's thighs, median line on body of fish. No. 14: greenish ware, from under handle? No. 15: greenish ware; solid rays. No. 16: two fragments probably from one vase with broad strap-handle springing from junction of twin handle-arches. No. 17: pale ware. No. 18: pale ware burnt gray. PLATES 17–18, FIGS. 8–12.

19–23. Collars. No. 22: pale ware. PLATE 18, FIG. 12.

24–30. Pedestals. No. 27: perforated triangle, point down, on left margin of sherd. No. 30: greenish ware. FIG. 13.

Addenda. 35–38. Among the finds of the 1952 excavation are four fragments of Late Geometric kraters illustrated here.

35. Fragment of lip with springing of handle; pale ware. 36. From lower neck and body. 37–38. From bodies. PLATE 22, FIGS. 10–11.

Krateriskoi.

31–34. Fragments of about twenty miniature stirrup-handled kraters were found. They vary in height from 11 to 15 cm. All pieces seem to have had a pedestal foot. The handle strap normally dips down on to the arch, but occasionally (*e.g.* no. 34) it tends to form a flat rectangular plate like that of the archaic glazed kraters (B 1). There are several examples of the twin handle (*cf.* no. 16). The fabric varies: a few pieces (*e.g.* no. 31) are of fine pale ware like Corinthian, and have the decoration of the shoulder still contained in a panel; they may belong to the Protocorinthian period. A number of pieces (*e.g.* no. 33) are of the usual archaic buff ware with streaky dark glaze and bear simple subgeometric decoration composed of dots, strokes, and zigzags.[13] Other pieces, like no. 32, are of finer ware with linear decoration but show a streaky dark glaze like that of no. 33. No. 34 is of coarser ware and of a heavier form comparable to the late archaic slack-profiled kantharoi; it also has bands of glaze on the interior like some late kantharoi (*e.g.* B 13). The majority of these krateriskoi, like nos. 31–33, are plain on the interior except for a band of glaze on the inside of the rim. A few pieces seem to have been covered with glaze both outside and in (in one instance apparently with white and purple stripes).

Without doubt the series begins in the seventh century (*e.g.* no. 31), and the earliest examples may have been contemporary with the large Late Geometric kraters on which they are modelled. Pieces such as no. 33 probably come down at least to the end of the century, and no. 34 gives every appearance of being considerably later.

No. 31: it is not clear whether the shoulder panel contained other decoration than the rosette. PLATE 19, FIGS. 14–15. 35–38, see after no. 30.

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[12] A date as late as the third quarter of the seventh century for kraters of this class is suggested by the finds at Corinth and Syracuse (*cf.* p. 38, n. 10).

[13] *Cf.* the hydriskai from the Argive Heraeum, *Hesperia* XXI, pl. 55.

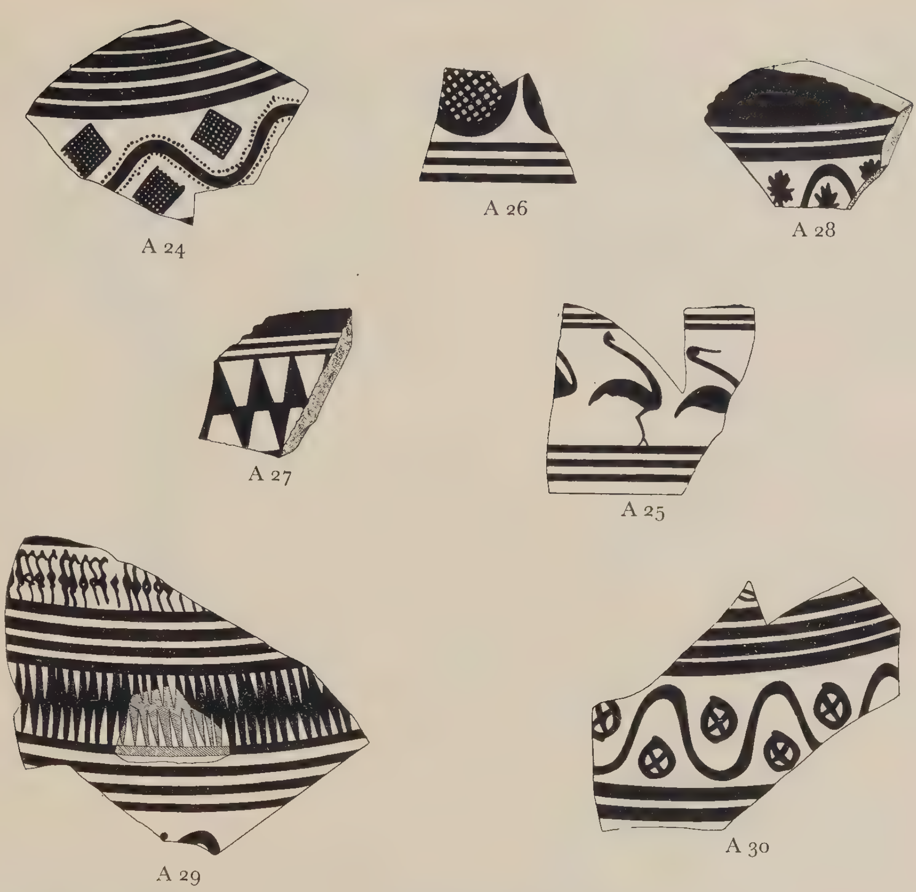
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Fig. 13.—Late Geometric Pottery.
Scale 1 : 4.

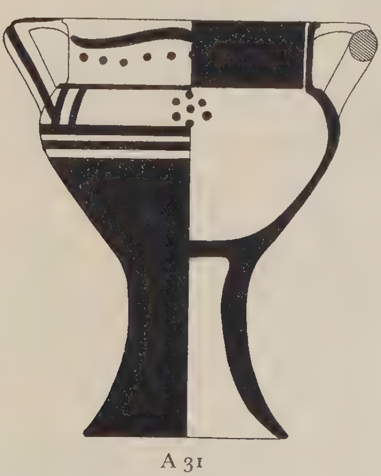

Fig. 14.—Subgeometric Krater.
Scale 1 : 2.

B. Argive Archaic Glazed Wares

The vases dedicated at the Agamemnoneion in the archaic period consist mainly of kraters and drinking cups of forms hitherto hardly noticed in the Argolid; the concentration on vessels of these types is attributable to the requirements of the cult. The ware is buff, pale in the larger vases; the whole or the greater part of the surfaces of these vases is normally covered with dark glaze, which is often thin and streakily applied or dusty in appearance; the effect is frequently enhanced by groups of white and purple stripes [14] and occasionally by other patterns in white paint on the dark glaze. The larger kantharoi offer an exception, being frequently decorated with simple floral or linear motives; some of them have a thicker and more glossy glaze approximating to that of classical black-glazed ware.

Kraters.

1. Upwards of half a dozen big glazed vases, one made up. The diameter at the rim varies from *c.* 0·22 to 0·41 m. The clay is buff; the glaze is dark and generally streaky, covering the whole vase, except sometimes for a reserved triangle under the handle arch; groups of white and purple stripes are normally found on the body and on top of the rim; in one case a running dog ornament is painted in white on the rim. The foot is in all cases as no. 1. The handle arch is joined to the rim by an oblong plate which does not fully cover the top of the arch; the handle thus constitutes a cross between the stirrup-handle proper and the column-handle. The miniature subgeometric stirrup-handlers (A 31–34) offer a link in the development from the true stirrup-handle to the form found here; and the Early Black Figure krater (E 1) also, though of different profile (FIG. 30), seems to show a stage in the same process. A similar glazed form with white and purple stripes appears in Corinth in the late seventh century.[15] The Argive form may therefore have been evolved about the end of the seventh century or early in the sixth.[16] FIG. 16.

2–3. A second form, smaller than the first and with shoulder-handles and no ledge to the rim, is represented by upwards of half a dozen pieces. The diameter at the rim ranges between *c.* 0·11 and 0·21 m. The ware and glaze are as no. 1, but added colour is not found; bands are sometimes reserved on the clay ground on both interior and exterior. One rather more elaborate example with channelled handles (no. 3) has an unglazed lower body and linear decoration in the handle zone. No complete profile has been obtained, but the feet seem to be the same as those of the big kraters (no. 1). A fragment found in an early seventh-century context at Corinth seems to offer a prototype for this class; but the narrower form of nos. 2–3 and the absence of polychrome stripes seem rather to argue for a later date than the big kraters like no. 1.[17] FIG. 16.

Kantharoi.

4–13. The Argive archaic kantharos has a low foot or flat base and handles flush with the rim. It is very common at the Agamemnoneion in all sizes from little vases 5 cm high to upwards of 20 cm.;[18] there are about sixty examples and a multitude of fragments. The large and medium kantharoi mostly have a firm ring-foot like that of Corinthian kotylai of the

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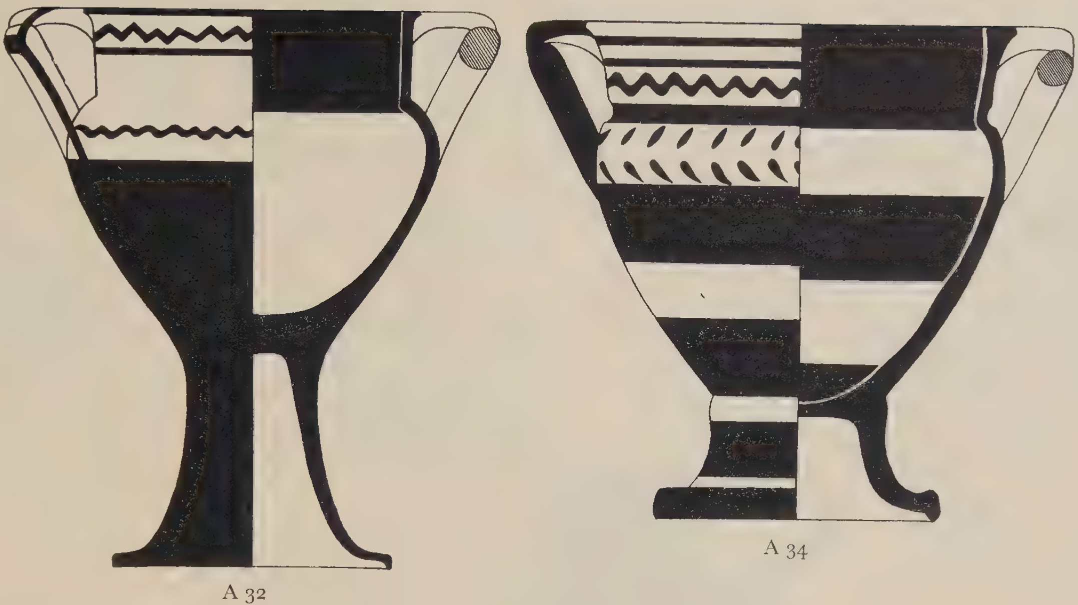
[14] This usage was much favoured in Corinth in the last third or so of the seventh century and the first third of the sixth.

[15] *Corinth* VII i, pl. 32, no. 233; *Hesperia* XVII, pl. 79, D 13.

[16] This form is matched by Schliemann, *Tiryns* 118; *cf.* also Wace, *Chamber Tombs*, pl. 56. *Cf.* the handle fragment *Hesperia* XXI 199, no. 236, pl. 53.

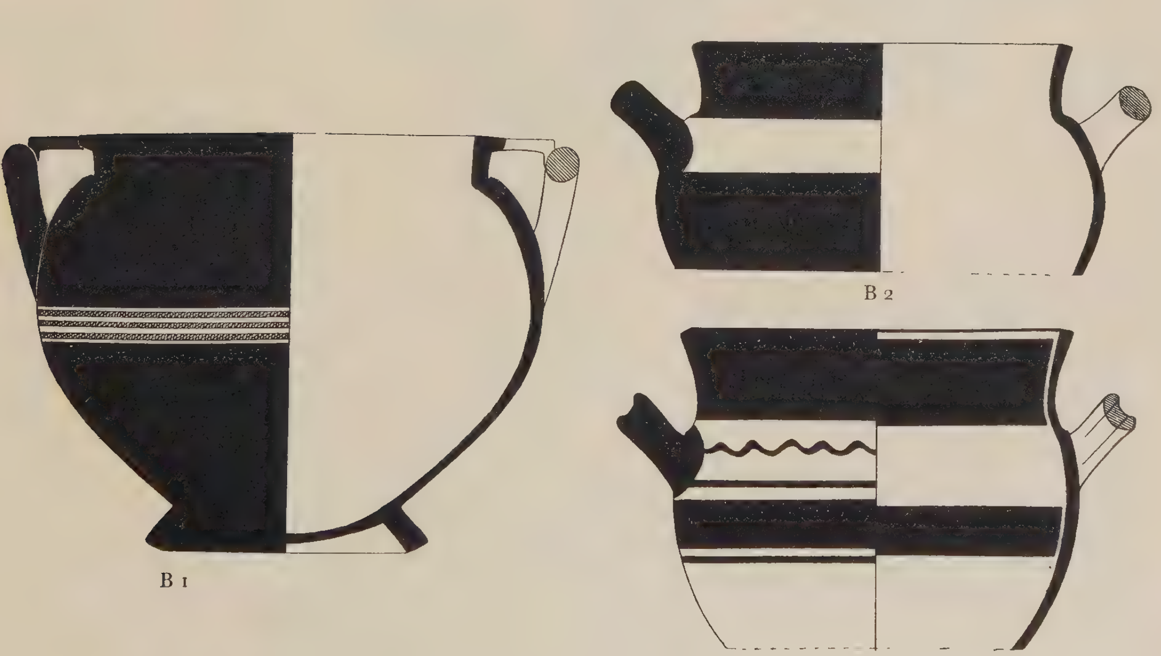
[17] For the profile *cf.* the Corinthian stirrup-handlers from a well of the end of the sixth century, *Hesperia* VII 583, fig. 12.

[18] This form is, however, hardly found among the true miniatures (pp. 48 ff.).



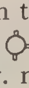
A 32 A 34

Fig. 15.—Subgeometric Kraters.
Scale 1 : 2.



B 1 B 2 B 3

Fig. 16.—Archaic Glazed Kraters.
Scale 1 : 4.

second half of the seventh and the early sixth century, and these examples frequently have white and purple stripes on the glaze. There are odd examples of a sharply flaring foot like that of the later Corinthian kotylai. A high heavy foot-ring also occurs among loose-profiled tall kantharoi as nos. 11–13. The small kantharoi usually have a flat base-disc. The larger kantharoi always have two handles. Among smaller ones two handles are the norm, but one- and three-handlers are also found; in the latter the handles are usually set at equal distances round the lip, but the arrangements  and also occur. There are four or five examples of handles with plastic cross-bars (*e.g.* no. 7); these only occur on unglazed or striped vases.

The clay is buff or greenish buff. The smaller kantharoi occasionally have glazed stripes on a plain ground outside, but are usually covered with streaky dark glaze outside and in (except under the foot), and frequently enhanced by white and purple stripes (*e.g.* nos. 4–5). Floral and linear decoration is restricted to the large kantharoi.

This kantharos seems to be an Argive form; it occurs in considerable numbers in a deposit at Argos,[19] is not unknown at the Argive Heraeum sites,[20] and occurs in isolated examples, imported and perhaps Argive, in Ithaca.[21] There is no visible link between the Late Geometric kantharoi [22] and the archaic glazed form. The kantharos continued at least into the second half of the fifth century in the Argolid, when the tightness of the archaic profile had completely vanished.[23] The glazed kantharoi with white and purple stripes probably began in the late seventh or early sixth century; the majority of the larger pieces, with their slacker profiles and perfunctory ivy sprays, should date after the middle of the sixth century.

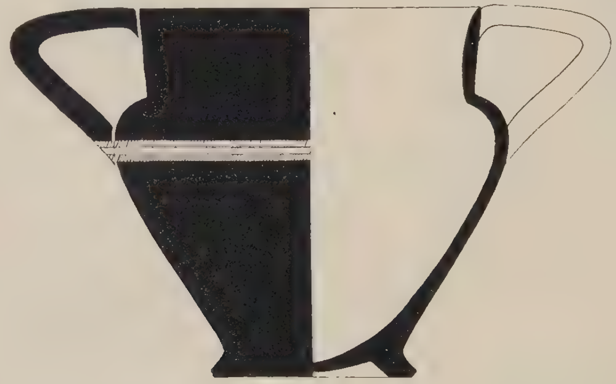


Fig. 17.—Archaic Glazed Kantharos.
Scale 1 : 4.

No. 4: white stripes. No. 5: white and purple stripes. No. 6: no added colour visible. No. 7: glazed stripes on exterior of body; painted spray on lip? No. 8: thicker dark brown glaze. No. 9: white stripes on glazed band on exterior? Another similar piece has white and purple stripes in this position. Interior glazed. No. 12: thin white stripes on belly outside and on interior of lip. No. 13: good brown glaze, lustrous in places; wavy line decoration in white on lip, and perhaps white stripes on body. PLATE 19, FIGS. 17–18.

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[19] In the archaeological collection at Argos, apparently from the shrine *BCH* XXXI 180, which should therefore be assigned to a male divinity or hero rather than to Artemis; the larger decorated kantharoi do not seem to have been represented in this deposit.

[20] *Cf.* the cognate form *AJA* XLIII 424, fig. 12, no. 1225, fig. 13, and p. 425 where the presence of two-handled kantharoi is remarked. The form also occurs in Mr. Caskey's deposit, *Hesperia* XXI 196, no. 199, pl. 53.

[21] From Polis, *BSA* XXXIX 20, fig. 7, pl. 10; from Aetos, p. 289, FIG. 11 no. 773.

[22] As *Tiryns* I, pl. 18.

[23] *Cf.* the baby one from Argos, *ADelt* XV 47, fig. 29. *Cf.* also the relief in Argos, Vollgraff, *Inhumation en terre sacrée* 24, fig. 3.

Skyphoi.

14–17. There are only four examples, each with its own individuality.

No. 14: of the same ware as the Late Geometric vases, glazed all over. No. 15: ware as Corinthian, but with the Argive flat base and poor streaky glaze all over. No. 17: glaze on the way to becoming uniform like Attic black; but the ware seems Argive; *cf.* Ithaca (p. 273, FIG. 7 no. 664); *cf.* also the similar vases *Délos* X, pl. 55, no. 664, and Ure, *Sixth and Fifth Century Pottery from Rhitsona*, pl. 9. PLATE 19, FIG. 19.

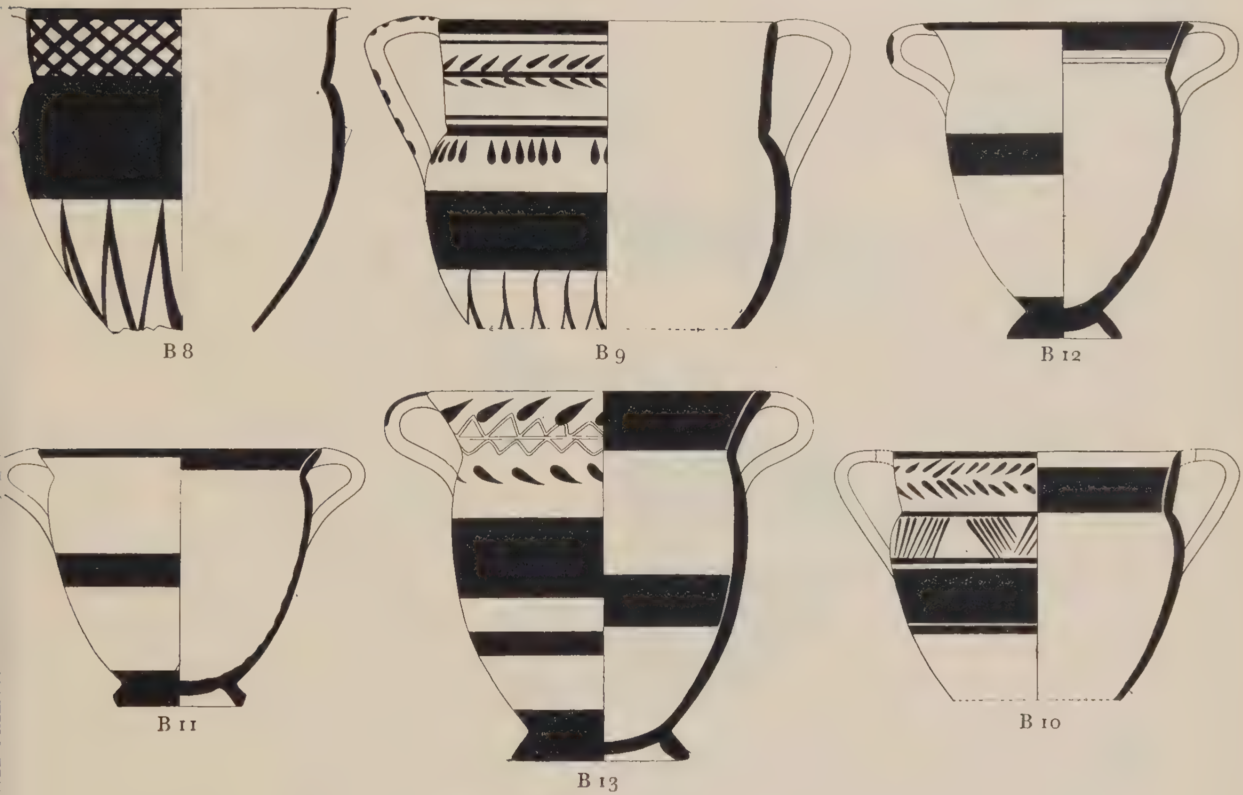


FIG. 18.—ARCHAIC GLAZED KANTHAROI.
Scale 1 : 4.

One-handled Cups.

18–22. These fall into two classes: one of fine fabric with a concave wall and single kantharos handle (nos. 18–20), and the other a simple round-bellied type (no. 21); there are six or seven examples of either form. One or two fragments of the form of no. 19 show glaze stripes on the exterior of the belly. No. 18 has a firm surface with red clay and red glaze, the rest are buff with the normal streaky glaze. No. 22, of pale ware very like Corinthian, seems to be a one-handler and presumably had a kotyle handle; it has very faint traces of glaze outside and in. PLATE 19, FIG. 20.

Bowls.

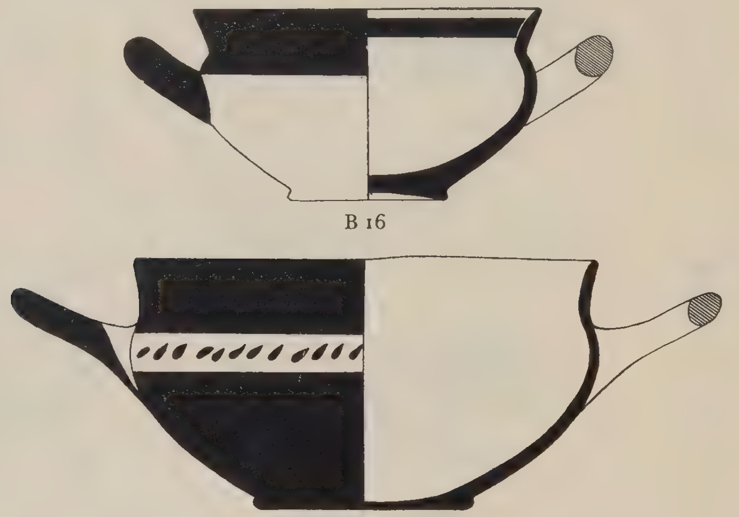
23–24. There are four or five examples of shallow footless bowls with poor glaze inside and a band of glaze outside (no. 23); they vary in diameter from 0·078 to 0·115 m.: the larger ones have the rim slightly flattened on top. No. 24 is small and sturdy, and glazed all over. PLATE 19, FIG. 20.

Jug.

25. The only example is a small vase in the form of a cup with a horizontal ledge at the lip, which seems to be a by-product of the archaic kantharoi and is of the same ware with streaky glaze. PLATE 19.

Kalathoi.

26–30. Pieces of fifteen to twenty vases. The height varies from 4 to 7 cm. They are mostly glazed outside and in (except on the underside of the base); purple or white and purple stripes are sometimes discernible on the interior (*e.g.* nos. 26, 28, 29: on no. 29 apparently on the exterior as well). A few pieces are unglazed on the outside (*e.g.* no. 26): these are squat in build and have a well-prepared pale surface and rather finely turned extremities; they may represent an earlier archaic type. The all-glazed ones with their streaky archaic dark glaze are probably sixth-century. One piece rests on four little stumps (no. 29). No. 30 is a curious variant; it has poor brown glaze outside and in.


B 16

B 17

Fig. 19.—Archaic Glazed Cups.
Scale 1 : 2.

The kalathos occurs in Attic and Corinthian Geometric, and is a regular Corinthian archaic form. The Argive archaic form, which was probably derived from the Corinthian, occurs in the tomb deposits at Mycenae and the Argive Heraeum, both plain outside[24] and all-glazed.[25] It is here probably to be regarded as a drinking-cup rather than a basket.[26] PLATE 19, FIG. 21.

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[24] *AE* 1937, 386, fig. 10, perhaps in an early context; *cf.* also *Hesperia* XXI 195, no. 190, pl. 53.
[25] Wace, *Chamber Tombs*, pl. 56; Blegen, *Prosymna* II, fig. 411; also at Argos, *cf.* p. 44, n. 19.
[26] *Cf.* the handled vase from Mycenae, Wace, *Chamber Tombs*, pl. 56, H.2.

Protome Bowls.

31. Nine fragments from the upper part of bowls or small dinoi with attached protomes were found, as also a number of rim fragments with the same section. One bowl (*a*), of which the greater part is preserved, gives a complete profile and is reproduced in the restoration FIG. 22; it has, however, a stub-ended handle on the shoulder, which would prevent the regular spacing of three protomes round the rim, and in view of Caskey and Amandry's discovery of an identical protome attached to a pedestal-bowl [27] the restoration in FIG. 22 must be considered conjectural, though there is no evidence among the fragments from the Agamemnoneion for the association of the protomes with a pedestal-bowl.

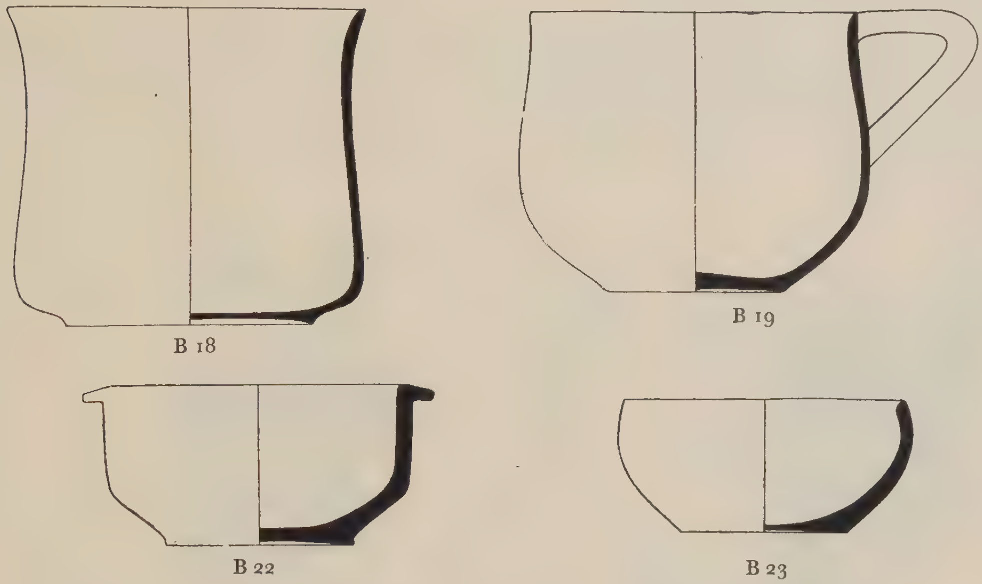

FIG. 20.—ARCHAIC GLAZED CUPS AND BOWL.
Scale 1 : 2.

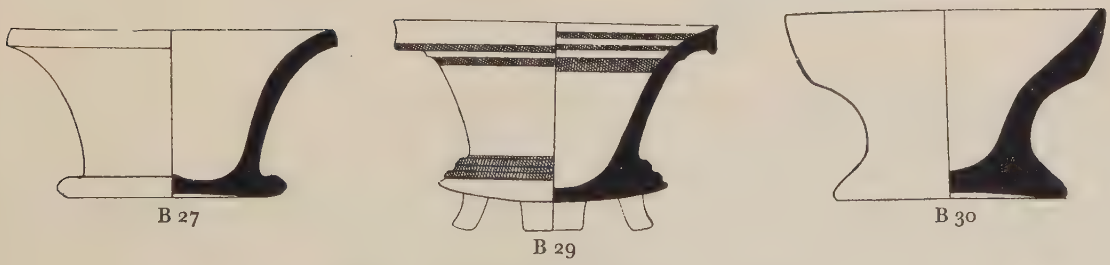

FIG. 21.—ARCHAIC GLAZED KALATHOI.
Scale 1 : 2.

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[27] *Hesperia* XXI 185, no. 133, pl. 49, with a second protome no. 134.

(*a*) Nearly complete bowl. H. 0·09 m. Buff clay; on exterior, streaky dark glaze, with white and purple stripes. (*b*) Nine female protomes, broken away with a part of the vase rim. There is mediocre dark glaze on the springing of the protomes, the arms, coils of hair on the back, and stephane. The face, with the crisp strands of hair enclosing it, is mould-made, and the other parts of the protome have been applied on this; the moulded part is unglazed. Eight of the faces seem to come from a single mould, the ninth is similar but smaller, and may come from a derivative mould. The ware is of a light buff tone and fairly well prepared. It does not appear to differ from that of the vases to which the protomes were attached; and the whole must therefore be of Argive manufacture, though the faces no doubt derive from a Corinthian model.[28] PLATE 23, FIG. 22.

Pyxis.

32. One striped pyxis of the Corinthian convex form with high arched handles. H. 0·20 m. Cream surface imitating Late Corinthian; reddish-brown glaze, fairly uniform. The appearance of clay and glaze resembles the late kantharos no. 13. Unglazed on inside. FIG. 22.

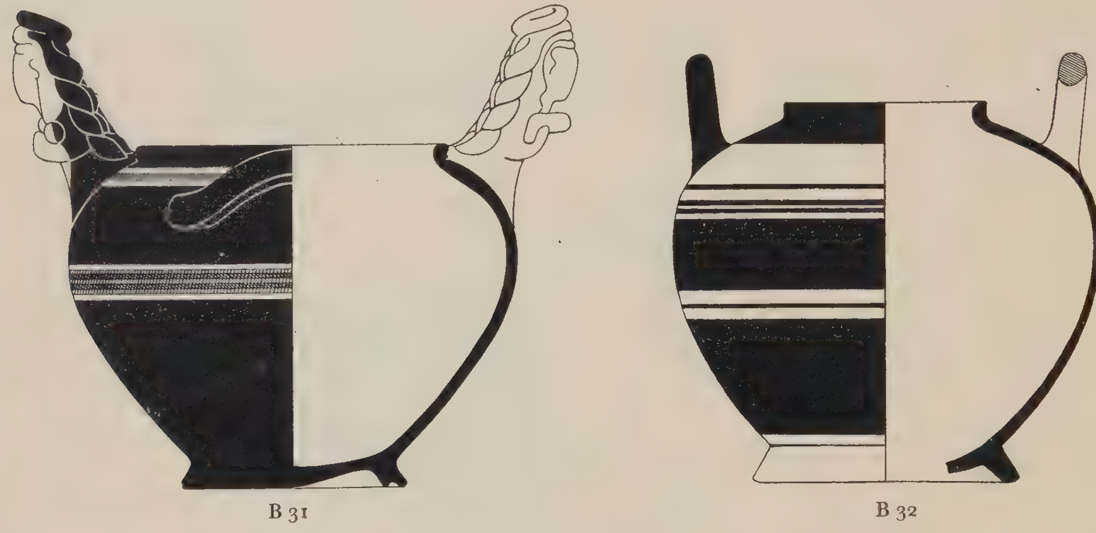

FIG. 22.—ARCHAIC GLAZED PROTOME-BOWL AND PYXIS.
Scale : B 31, 1 : 2: B 32, 1 : 4.

C. ARGIVE MINIATURE VASES

Glazed Ware.

1–6. These are diminutive versions of archaic glazed forms, either wholly glazed (nos. 1, 4, 5) or with bands reserved on a glazed ground (nos. 3, 6). Buff ware; the glaze dark and generally of poor consistency; the kothon no. 5 apparently had white and purple stripes along the lip. The krateriskoi (as nos. 1–2) and skyphoi (no. 3) are the commonest forms, each being represented by half a dozen pieces. The cup no. 6 is exceptional in having a second handle set horizontally. To this repertory of forms may be added a couple of scraps of baby kantharoi about 2 cm. high; for glazed hydriskai see below on nos. 7–8. PLATE 20.

Striped and Plain Wares.

7–16. These are primarily plain vases with a tolerably well prepared surface, bearing at the most thin painted stripes or corollae as decoration. Unlike the glazed miniatures, they are substantive vase-types rather than diminutive copies of current forms. Hydriskai of the type nos. 7–8 have been found in hundreds at the Argive Heraeum,[29] but at the Agamemnoneion there is only a handful of fragments; besides plain and striped pieces, two scraps seem to come from very small glazed hydriskai. The cauldron (nos. 9–10) is the commonest form among the miniatures, being represented by nearly twenty specimens; a minority bore handmade protomes of bulls, and in one case of a ram, at three equally spaced points on the rim. They seem normally to have been plain, but one example (no. 10) shows traces of painted drops. The form is related to the glazed bowl with human protomes (B 31), but these miniatures are probably a direct adaptation of bronze prototypes.[30] The phialai mesomphaloi (no. 11) have rings of glaze on the inside only around the pointed boss.[31] The forms nos. 12–15 are handmade and are familiar as votives at other sanctuaries in the Argolid.[32] That of no. 12 is normally plain, though sometimes with dabs of glaze on the handles; one example is glazed inside. In nos. 13–14 the painted decoration consists of crosses (single or multiple) on the interior or on both interior and exterior: there is always one suspension hole, in one case several. The crimped bowl no. 15 is rounded underneath, but a second example has the springing of a pedestal foot. The table no. 16 is unpainted and decorated with scored patterns and pastille rosettes; handle and rim suggest the influence of basket-work. PLATE 20, FIGS. 23–24.

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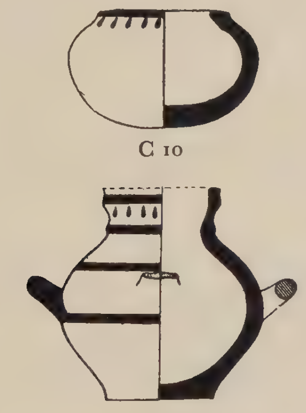
[28] Cf. *Corinth* XV ii, pl. 13, IX 11–12. Mr. R. V. Nicholls attributes the protome to a date around the middle of the century (or a little later), cf. *BSA* XXXII, pl. 16, 7; *Perachora* I, pl. 107, no. 236, *Corinth* XV ii, 92, mould 13.


C 10

C 7

FIG. 23.—ARGIVE MINIATURE VASES.
Scale 1 : 2.

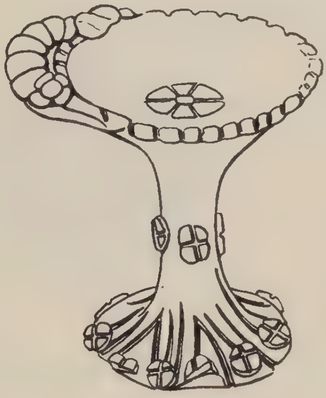

C 16

FIG. 24.—ARGIVE MINIATURE TABLE.
Scale 1 : 1.

White-slipped Ware.

17–20. This last class of miniatures is of soft friable clay, generally reddish and similar to that of many of the figurines; some pieces still show traces of a chalky white slip which no doubt provided a ground for linear painted decoration.[33] The common form is a shallow bowl with thickened rim (nos. 17–18), often (as no. 18) with primitive rotelle-lugs and sometimes also with a rounded central boss.[34] A variant is no. 19, which reproduces the unslipped form with reflex handles (no. 12), but being wheel-made has a neater profile. The basket no. 20 occurs in two specimens.[35] PLATE 20.

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[29] *Hesperia* XXI 197 ff., pls. 54–55.

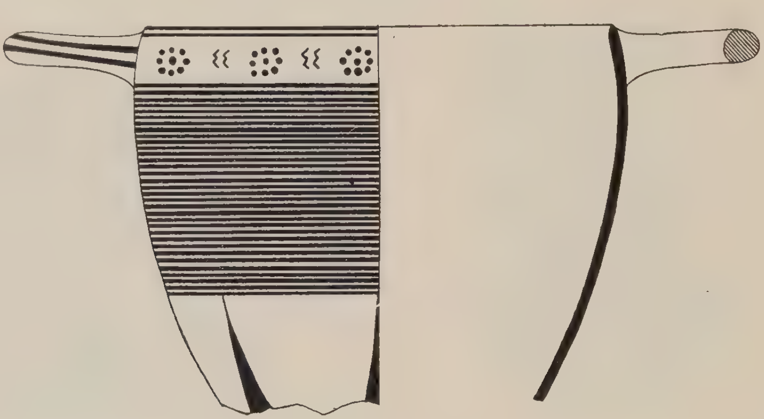
[30] For protome miniatures cf. *Tiryns* I 101, fig. 37; *Argive Heraeum* II 98, figs. 33 f.; Argos (*cf.* p. 44, n. 19), and perhaps also *AJA* XLIII 421, fig. 11 (fourth row); *Hesperia* XXI 200, nos. 243 ff., pl. 56.

[31] Cf. *Perachora* I, pl. 29, 3 (all-glazed), and possibly Blegen, *Prosymna* II, fig. 439, no. 192; for the vase-form see Dunbabin *Perachora* I 148 ff. The pointed spike is also found on bronze phialai, cf. *ibid.*, pl. 65, 1.

[32] Cf. *Argive Heraeum* I 57, fig. 30, II 96 f., fig. 32; Schliemann *Tiryns*, pl. 27*b*; *Tiryns* I 99, figs. 31 f.; *Hesperia* XXI 194, Nos. 181–6, pl. 53. The bowl with suspension holes seems to appear in the Geometric era at Corinth (*Corinth* VII i, pl. 8, no. 50).

D. PROTOCORINTHIAN AND CORINTHIAN VASES

There are fragments of a dozen Protocorinthian vases dating recognisably before Early Corinthian; in addition a few scraps of striped skyphoi and perhaps some of the pieces of conical oinochoai and concave pyxides and their lids belong to the Protocorinthian period. The volume of the Corinthian, and especially that of the sixth century, is much greater. Apart from very numerous fragments of miniature kotylai there are some three dozen complete or partially restored pieces, and fragments of scores more vases. The commonest shape is the kotyle, but a considerable range of other forms is represented; alabastra are rare, and there are no aryballoi. Many fragments of black kotylai and kotylai with debased animal zones have a muddy brown or dark glaze, but the consistency and colour of the ware does not alter sufficiently to permit the distinction of an Argive manufacture. The Corinthian ware continues on this site into the fifth century, and there is also Corinthian Red Figure (F 4).[36]



D 5

FIG. 25.—PROTOCORINTHIAN KOTYLE.
Scale 1 : 2.

Protocorinthian.

1–4. Fragments of small drinking-cups dating about the end of Early Protocorinthian. Nos. 1–2 are perhaps from cups with vertical handles, resembling the form Johansen *VS*, pl. 10, 3.[37] No. 2 is unglazed inside and of the firm reddish

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[33] *Cf.* Frickenhaus, *Tiryns* I 95; for the play of colours cf. *Argive Heraeum* II, pl. 64, 4.

[34] For the lugs cf. *Tiryns* I 99, fig. 32.

[35] Cf. *Tiryns* I 97, fig. 30; Nauplia Mus. 3454; *Perachora* I, pl. 29, 22; Corinth, *AJA* XXXV 20, fig. 18; Ure, *Sixth and Fifth Century Pottery from Rhitsona*, pl. 10.

[36] Dr. R. J. Hopper has kindly looked over the Corinthian material with me and given me the benefit of his advice. Mr. T. J. Dunbabin elucidated obscure points in the design of no. 7

[37] The flat strap-handle of no. 1 is uncommon in Protocorinthian; it is matched at the Argive Heraeum, *AJA* XLIII 424, fig. 12.

Protocorinthian ware. No. 3 is from a kotyle with a wiry bird-file on the lip-band.[38] No. 4 is unglazed inside. Date about the last years of the eighth century.[39] PLATE 18.

5. Fragments of several slim kotylai with a narrow zone below the lip and tall rays on the lower belly; first half to middle of seventh century. One fragmentary vase. FIG. 25.

6. Considerable fragments of a large kotyle of the Aegina class.[40] D. 0·20; H. 0·18 m. Protocorinthian reddish ware; parts too badly corroded for the design to be recovered. Below the lip, leaf-cross with rays; zone of lattice. Main zone, lion, deer, etc. In secondary zone, hare-hunt. Doubled rays above foot. Second quarter to middle of seventh century. Some details FIG. 26.

7. Fragment of a still larger kotyle; yellow ware, surface very badly corroded. Below the lip, leaf-cross. Main zone, lion's head. Similar to Kraiker, *Aigina* pl. 17, no. 254. This vase was equal in size and quality of draughtsmanship to any of the Middle Protocorinthian kotylai. Second quarter to middle of the seventh century. FIG. 26. See below, p. 178, Agamemnoneion Painter, no. 3.

8. Fragments of at least three dog-kotylai. The one illustrated, with fine glaze bands on the body, probably belongs to the Protocorinthian period, the other fragments probably Transitional–Early Corinthian period.[41] For the class *cf.* Payne *NC* 279, no. 191. PLATE 18.

9. Fragments of pyxis of kotyle form. Pale ware; purple paint on alternate blobs of rosettes. Lip-zone, panels with leaf-cross and vertical squiggles; dotted chequer band. Lions in main zone. The vase-form is a distinctive Transitional–Early Corinthian one.[42] It appears to be descended from a form with ordinary kotyle-handles, which was imitated in Attic in the seventh century but goes back to the Early Protocorinthian period in Corinth.[43] PLATE 18.

Alabastra.

In addition to two complete vases (nos. 10–11) there is one fragment from the bottom of a small alabastron.

10. Pointed bottom. H. 0·08 m. Polychrome and dotted bands as *NC* 284, no. 376. Early Corinthian period.

11. H. 0·045 m. Tongues on neck and bottom. Dancer. About the beginning of Early Corinthian. Mr. T. J. Dunbabin informs me that it is related to the Typhon Group (*NC* 275). FIG. 26.

Concave Pyxides.

12. Fragments of a score of examples. Diameter varies between *c.* 0·06 and 0·105 m. All are decorated with band and dot as *NC* 292, no. 665, sometimes with rays above foot; in almost all cases there is a considerable outward curve of the vase wall. Fragments occur of upwards of a dozen lids appropriate to this form, normally rising slightly to the centre; band and dot decoration. Transitional–Early Corinthian.

13. One fragment of type *NC* no. 667 with double verticals.

14. Fragment with a deep band of unincised animals (bird and lion), with blob filling; white and purple stripes above and below; cf. *Perachora* I, pl. 32, 13 (late seventh-century). Transitional–Early Corinthian. PLATE 21.

Pyxis with Convex Sides, without Handles.

15. A few fragments from small vases with sparse glazed bands and stripes on the clay ground, and one or two fragments of lids. Form as *NC* 306, fig. 141. Diameter at rim *c.* 0·06 m. The form is not easily distinguishable from the Argive protome-bowl (B 31), except for the rather sharper off-setting of the rim.

Tripod Pyxides.

16. Fragments. Diameter at foot 0·08 m. Subgeometric long-bodied bird on each leg-panel. Cf. *NC* 308, nos. 921 ff.

17. Diameter 0·105 m. Old-fashioned lotus pattern of type *NC* 323, no. 1330, fig. 62 f. on each leg. Sixth-century.

18. Fragments of several vases decorated with horizontal bands, and lid fragments to match; cf. *Perachora* I, pl. 33, 17.

Powder Pyxides.

19. Three fragments with simple linear decoration.

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[38] *Cf.* most closely *Corinth* VII i, pl. 17, no. 123; the legs of the birds on D 3 (PLATE 18), 3 are shorter and more supple.

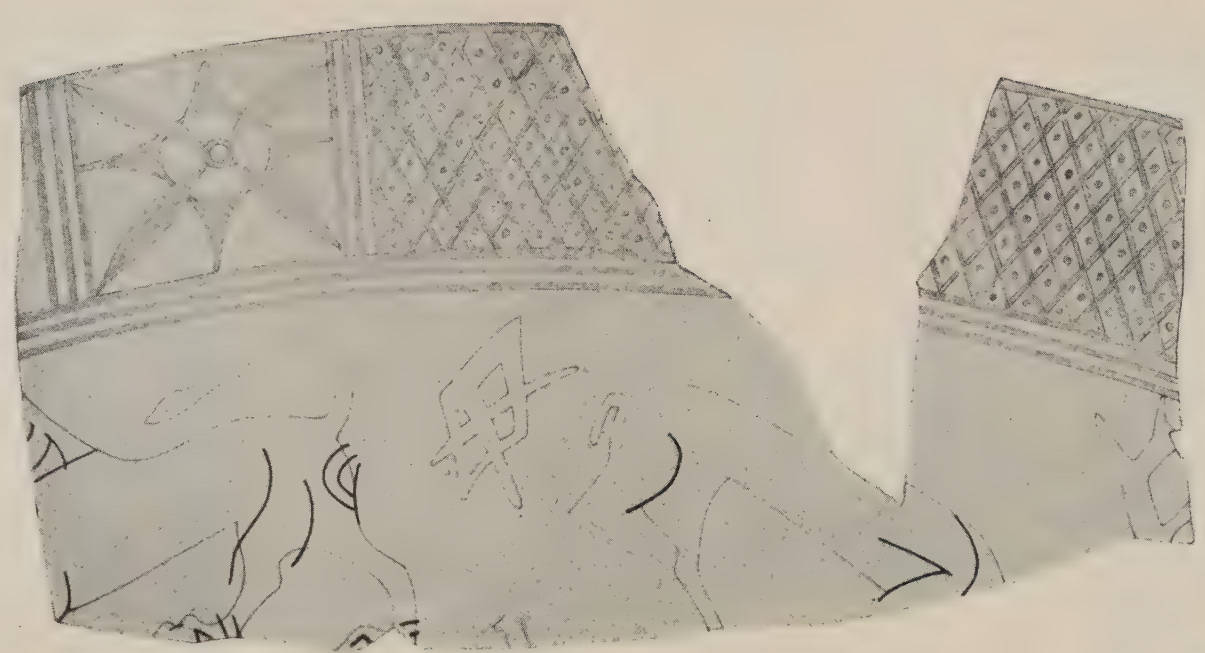
[39] The arrangement of the pattern on no. 4 recalls a slightly earlier usage (cf. *Perachora* I, pl. 12, 2 from the Akraia deposit; *BSA* XLII 147, fig. 6*a*, 151, n. 4) but is matched in a deposit of Protocorinthian pottery fragments of *c.* 700 B.C. at Old Smyrna.

[40] *Cf.* Kraiker, *Aigina* pls. 17 f., nos. 253–4.

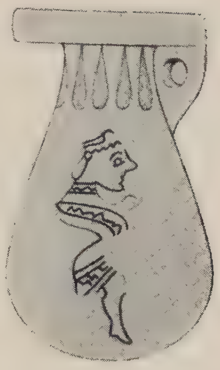
[41] Discoveries in the destruction stratum at Old Smyrna confirm that dog-kotylai were current in the Early Corinthian period.

[42] *Cf.* Payne *NC* 295 f.; Hopper, *BSA* XLIV 223 f.: other Transitional pieces Kraiker, *Aigina*, pl. 32, nos. 425–428, and perhaps pl. 11, no. 166.

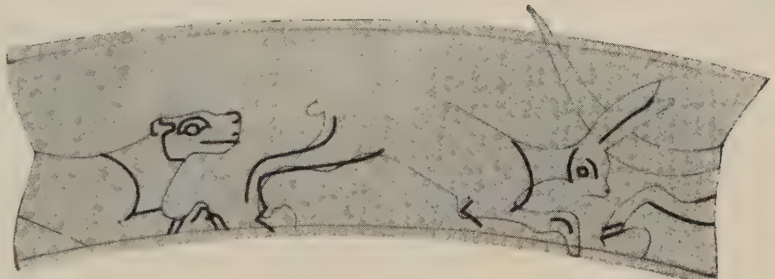
[43] *Cf.* Robertson, *BSA* XLIII 27 f.; Hopper, *BSA* XLIV 229 f.; Weinberg, *Corinth* VII i, 38 f., *Hesperia* XVII 211. The earliest examples are Kraiker, *Aigina*, pl. 8, no. 130, *BSA* XLIII, pl. 5, no. 72 (Ithaca), and a fragment from an eighth-century level at Old Smyrna.



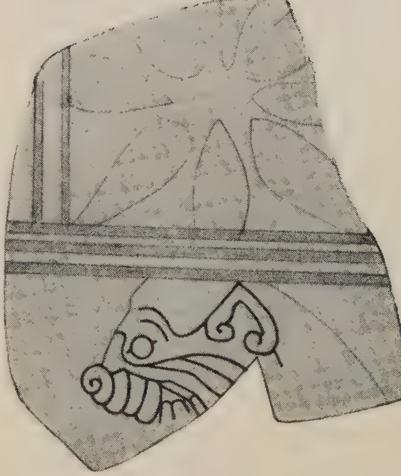
D 6



D 11



D 6



D 7

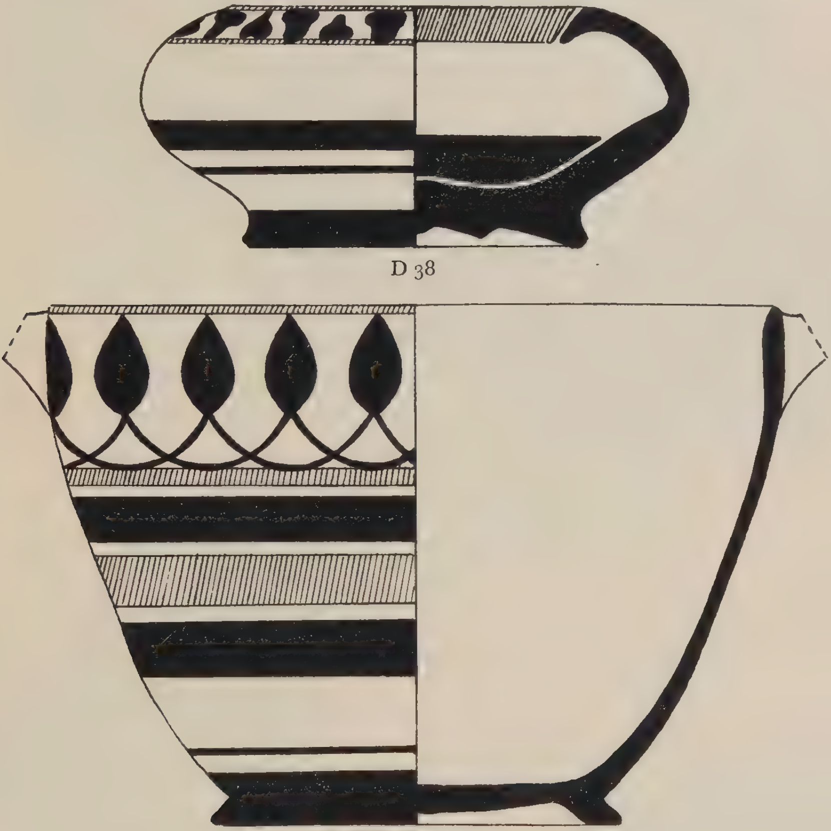
Fig. 26.—Protocorinthian Kotyle Fragments and Corinthian Alabastron.

Scale 1 : 1.

Convex Pyxides, with Collar and Arched Handles.

20–23. Larger vases of diameter 0·20 m. and upwards on the belly; for the form cf. *NC* 331 f.; *cf.* also Hopper, *BSA* XLIV 213 f. Fragments of about six pieces with red stripes and black bands, and zone decoration of palmette-scroll and other designs. Cream ware, except no. 21, which is buff and has red lines bounding the pyramids. No. 21 may be from a decanter, as *Hesperia* VI 282, fig. 20. There are also several fragments of lids with turn-down rims.

Such floral and geometrical decoration resembles that of Attic white-ground lekythoi and was current throughout the fifth century; *cf.* well-groups of the beginning and end of the century at Corinth, *Hesperia* VII 595, fig. 20, where the stepped pyramid motive is found; VI 282 f., where that and other motives are matched in somewhat debased forms; *cf.* also from fifth-century graves at Argos, *ADelt.* XV 46, fig. 28; 18, fig. 3. No. 23 has on the shoulder long-necked winged panther-bird mammals, and on the left of the main fragment a peacock's tail displayed? *Cf.* the similar pyxis *NC* 331, no. 1493 (de Ridder, *Vases peints, Bibl. nat.*, 44, no. 95, apparently also with peacocks), where the lowered tail is supported by a pair of hind legs. Fifth-century; no. 21 at least perhaps late fifth-century. PLATE 21.



D 38

D 27

FIG. 27.—CORINTHIAN VASES.

Scale 1 : 1.

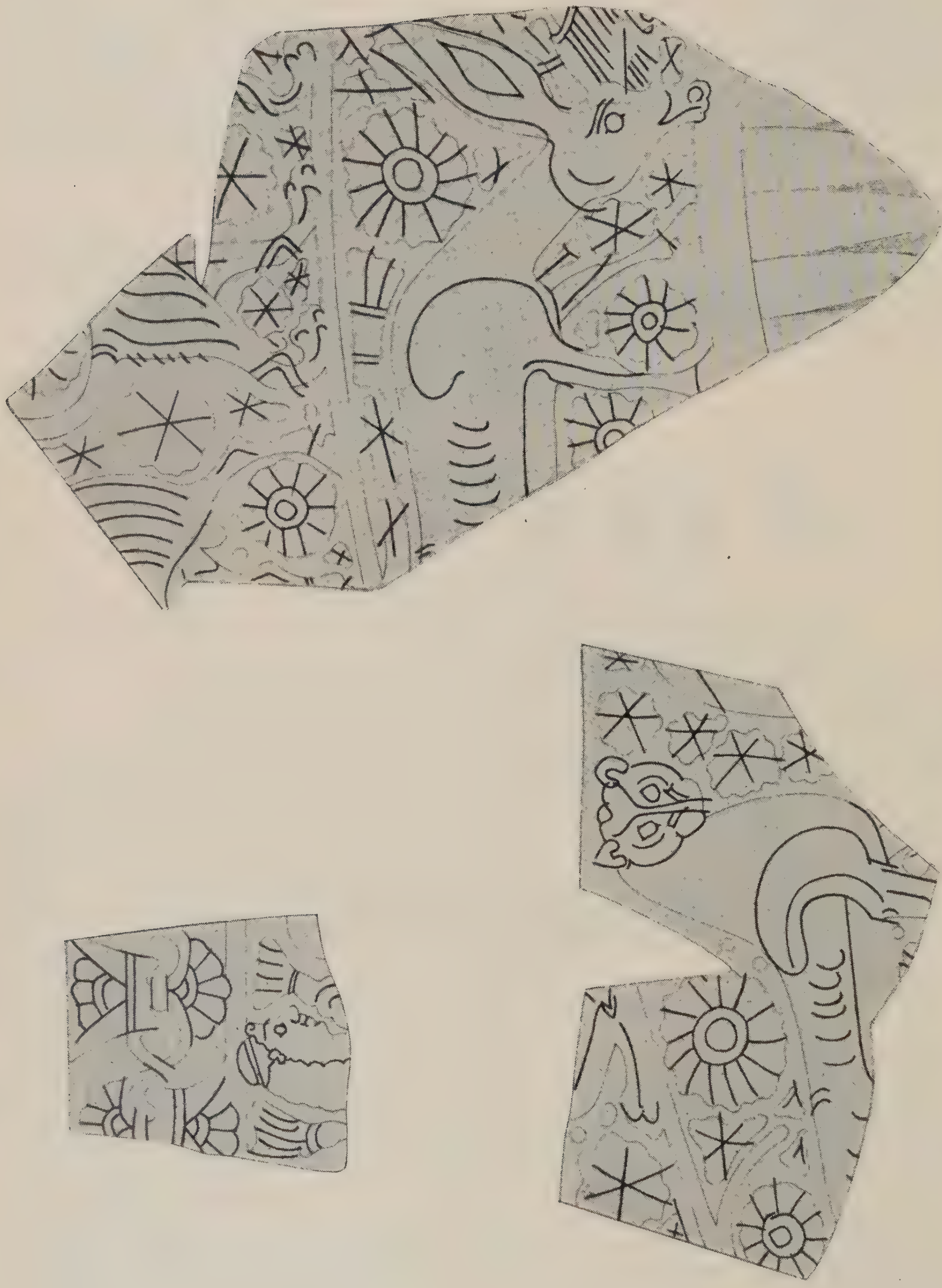
24. Fragments of a fine half-size pyxis with tongues on the shoulder.

Kotylai.

This is by far the most numerous of the classes of Corinthian vases, the great majority being cheap votives with perfunctory decoration.

25. Numerous black kotylai of sixth-century date, cf. *NC* 309 f., no. 973, fig. 151 and 324, nos. 1341 ff. Diameter at rim 0·105–0·195 m. Usually the foot is sharply flared and does not have a flat resting surface; thin rays above base. A few fragments seem Middle Corinthian, but the bulk is probably later.

26. Numerous miniature kotylai with flattened base. Diameter at rim 0·04–0·055 m. Vertical strokes below rim,



D 32

Fig. 28.—Corinthian Kotyle Fragments.

Scale 1 : 1.

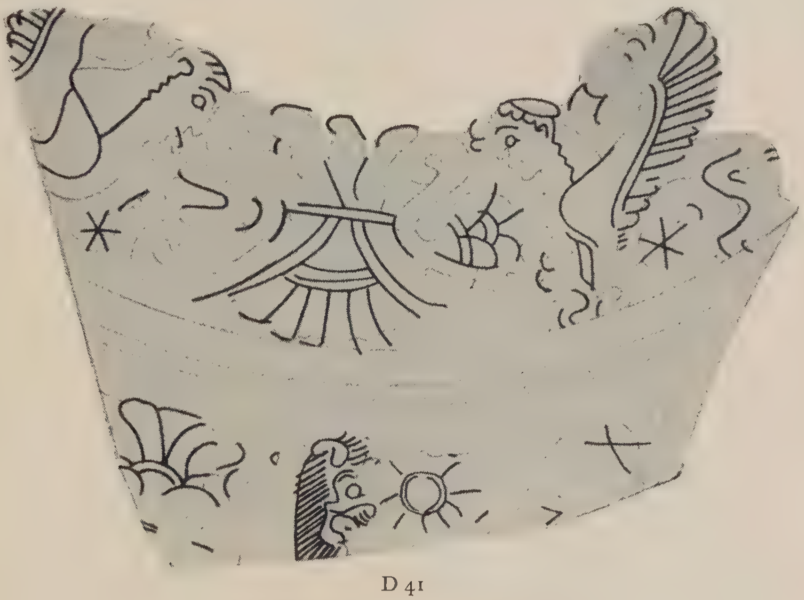
rest of body glazed or banded; cf. *NC* 334 f., on no. 1517. Such vases descend into the late fifth century (*Hesperia* VI 282, fig. 20), if not into the fourth (cf. *Olynthus* XIII 298 ff.).

27. Fragments of three or four medium kotylai with bands in glaze and red paint, similar in appearance to the white-style pyxides (D 20–23), and with lotus-bud ornament in black (apparently overpainted with red blobs) on the rim band. One example has the rolled foot-ring of *NC* 335, no. 1518. Late archaic. FIG. 27.

28–31. Numerous fragments of large and medium kotylai with undistinguished animal zones. The Late Corinthian I phase is represented by a medium kotyle with confronting sphinxes of the type *NC* 323, no. 1335 f. (no. 28). Sample fragments are shown on PLATE 21. No. 29: Early Corinthian. No. 30: Middle Corinthian. No. 31: by a follower of the Dodwell Painter, late Middle Corinthian. PLATE 21.

32. Fragments of a large early Middle Corinthian kotyle with doubled rays above foot. FIG. 28.

33–34. Two fragments with animal-in-hailstorm zones. No. 33: first half of sixth century; cf. *NC* 309, fig. 150. No. 34: of a more rounded form, cf. *NC* 279, nos. 192 ff., pyxis *Perachora* I, pl. 32, 13 (late seventh-century). PLATE 21.



D 41

FIG. 29.—CORINTHIAN OENOCHOE FRAGMENT.

Scale 1 : 1.

Cups with Offset Rim.

35. Fragments of four or five vases, a pair nearly complete. Diameter *c.* 0·135 m. Form hardly so full as the Middle Corinthian, and foot rather narrow and steep. Lip plain, glaze stripes above foot; decoration of carelessly drawn, long-tailed birds and griffin-birds. Cf. *NC* 324, nos. 1342 ff. Late rather than Middle Corinthian.

36. Fragmentary miniature vase of the same form. Diameter 0·07 m. Careless unincised confronting sirens and birds. Late Corinthian I.

Kothons.

37. A pair with reflex strap-handles, nearly complete. Max. diameter *c.* 0·17 m. Stripes and dotted band on shoulder; on one vase red paint is also used for stripes, as on Late Corinthian white-style vases, cf. *NC* 335, no. 1519. This form continued through the fifth century and beyond.[44]

38. Two fragmentary miniature vases, one, of max. diameter 0·06 m., with groups of vertical strokes on the shoulder, the other, max. diameter 0·075 m., with a band of pyramids on the shoulder.[45] About fifth-century. FIG. 27.

39. A perforated knuckle-handle, cf. *NC* 298, fig. 135.

Oinochoai.

40. Fragments of conical and trefoil-mouthed oinochoai with incised tongues or doubled verticals on the shoulder,[46] and of the underside of the body of an olpe of the second half of the seventh century.

41. Substantial fragments of a low-necked oinochoe of the broad-bottomed form. White and purple stripes bounding the animal zones on the body, low rays above foot. On shoulder, siren and sphinx confronting across palmette complex, panther; in belly zone, lions, goats, palmette complex. Good drawing of early Middle Corinthian, probably by the Dodwell Painter. Too corroded for satisfactory illustration; details FIG. 29.

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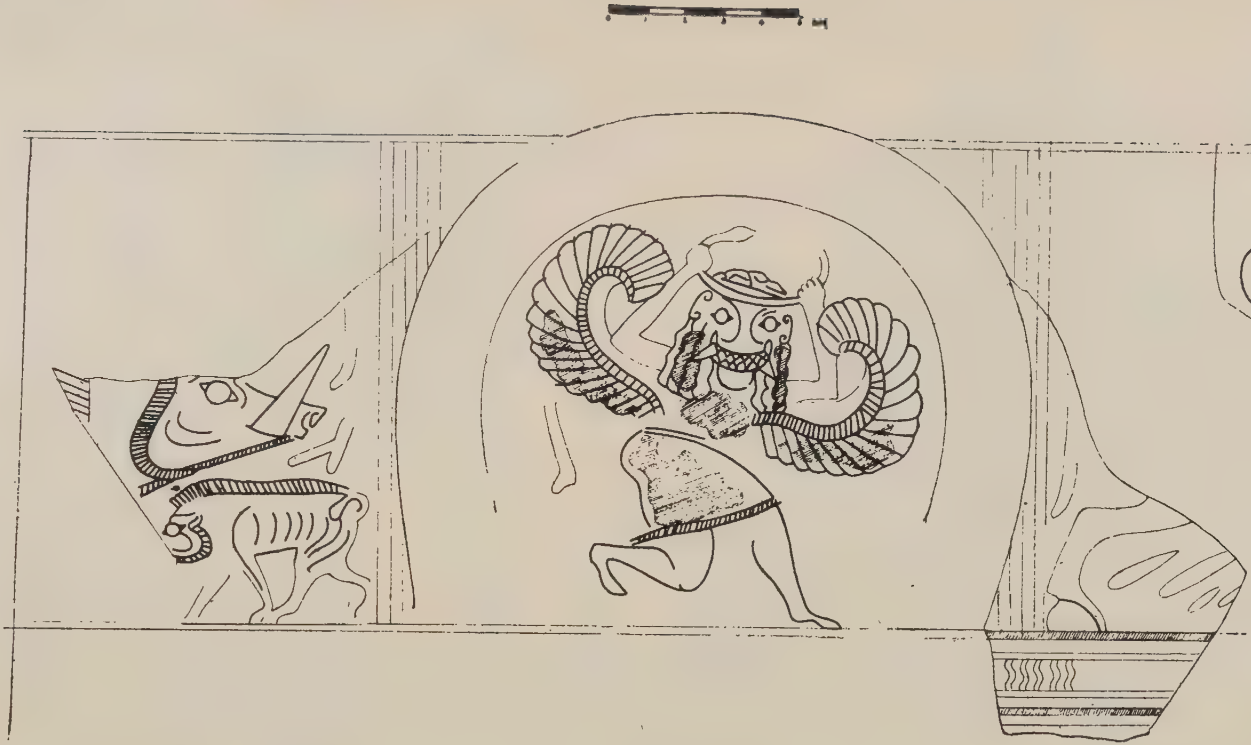
[44] *Cf.* Pease, *Hesperia* VI 284.

[45] Cf. *Hesperia* VI 284, fig. 22 (late fifth-century).

[46] The doubled verticals descend as late as the beginning of the fifth century at Corinth, *Hesperia* VII, 584, figs. 13 f.



E 1

FIG. 30*a*.—EARLY BLACK FIGURE KRATER.
Scale c. 1 : 2.

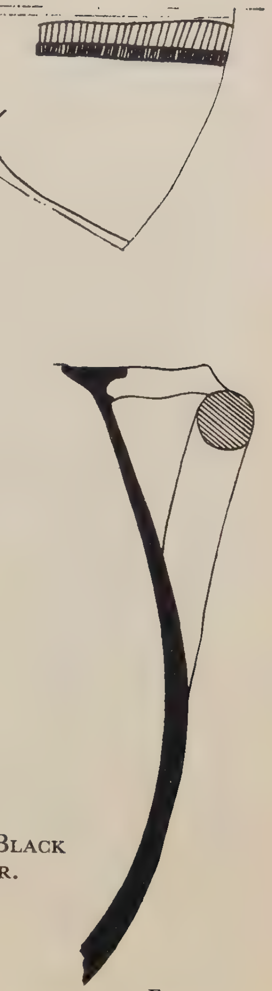


FIG. 30*b*.—EARLY BLACK FIGURE KRATER.
Scale c. 1 : 3.

E 1

Column-krater.

42. Substantial fragments of upper part of one vase. Diameter at rim 0·24 m. Buff ground, black glaze (orange on interior). On shoulder, on either side, bird between pair of griffin-birds; swan on either handle-plate. Lower body apparently completely glazed; faint traces of purple retouches on the figures, and purple stripes on the belly of the vase. *Cf.* the similar, though rather less carelessly drawn, piece from Corinth, *Hesperia* XX, pl. 92*e*. Late Corinthian I. PLATE 20.

E. Black Figure

With the exception of the unique Argive Early Black Figure piece no. 1, the ware of this class is of little intrinsic merit and mainly of late date. The vase no. 3 belongs to a class current in Athens in the early fifth century;[47] the style of no. 4 is also fairly well matched in deposits of the same period,[48] and no. 6 belongs to a class of big skyphoi which draw their inspiration from good vases of about the beginning of the fifth century. A terminus for the black figure pottery, as also for the Attic black-glazed ware (p. 58), would therefore be offered by the destruction of Mycenae by the Argives *c.* 468 B.C.

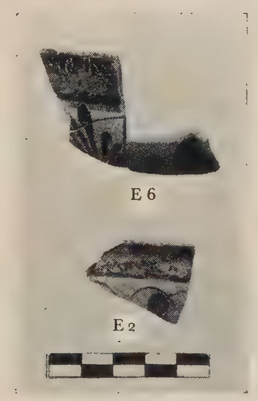


Fig. 31.—Black Figure Cup Fragments.

Early Black Figure.

1. Fragment of krater. Diameter at rim *c.* 0·33 m. Clay light buff, glaze brown. On rim, a band of short thick oblique painted strokes between white (and purple?) stripes. Occasional purple stripes on body. Double rays above foot. Interior glazed. In figured field, left, long-tusked boar to right with piglet to left; right, hoof and chine of boar to right; under the handle, long-tusked Gorgon brandishing serpent coils round her forehead; faint traces of purple retouches on Gorgon's dress, quills, and locks.

The soft clay and general appearance of the ware resembles the Late Geometric. The vase-form derives from the Late Geometric kraters; but the body has a slacker curve and the stirrup-handle has undergone the same modification as some of the subgeometric krateriskoi (A 31–34). The Gorgon bears a general resemblance to Attic of *c.* 600 B.C., but has no especially close affinities. The design betrays an imperfect acquaintance with this genre (*e.g.* in the confusion of the smitten and pursuing in the Gorgon's pose, and in the pig's ruff, which recalls that of Attic lions),[49] but the tilt of the Gorgon's wings and movement of her arms show originality. The Argive feeling for first things first shows in the position of the figured groups, the farmyard group taking precedence over mythology.[50] PLATE 17, FIG. 30.

Cups.

2. Fragment of cup or skyphos with painted floral band below lip. FIG. 31.

3. Fragment of bowl of stemmed kylix with trace of bird's wing in the tondo; bright, rather soft reddish clay. Uncertain fabric.

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[47] *Cf.* Vanderpool, *Hesperia* XV 294, on nos. 81–95. Lekythoi with similar processions are also dated in the early fifth century, *cf.* Thompson, *Hesperia*, Suppl. IV, 31.

[48] E.g. *Hesperia* XV, pls. 46 ff. The Boeotian (and Corinthian?) skyphoi of Mrs. Ure's group, *BSA* XLI, 25 f., present a similar style dating after the middle of the fifth century, but there the scheme and outlines of the figures are no longer archaic. For the boudoir scene on r.f. vases of the first half of the fifth century see Coliu, *Collection Kalinderu*, 90 f., 127 f.

[49] A similar pig's ruff, however, appears in Corinthian Transitional, Kraiker, *Aigina* no. 404, pl. 31.

[50] For a similar provincial appreciation of livestock *cf.* the fattened geese on the Eretrian b.f. amphora *BSA* XLVII, pl. 9 and the Boeotian flock on Gamedes' oenochoe (Hoppin, *Handbook of Black Figure Vases*, 18 f.). For the pig family *cf.* the Late Geometric vase Louvre A 514 (Stackelberg, *Gräber d. Hellenen*, pl. 9; Pottier, *Vases antiques*, p. 22).

Skyphoi.

4. Complete. Diameter at rim 0·118; H. 0·71 m. Buff clay, glaze dark; traces of *miltos* wash on clay surfaces in field. Incision on figures, but no trace of added colour. *A–B.* Procession with chariot. PLATE 21.

5. Nearly complete. Diameter at rim 0·127; H. 0·074 m. Clay rather pale buff, glaze dark; faint traces of *miltos* on clay surface under handle. No incision or added colour on figures. *A–B.* Man visiting lady; on *B* the man's legs are crossed and the stick projects from the leading end of the himation in the normal late archaic scheme, but on *A* (PLATE 21) the stick and forward leg appear to be reversed.[51] PLATE 21.

6. Fragment with inscription on lip: ?- - σιτοσ - - (inverted?). FIG. 31.

7. Fragments of lip and wall of deep skyphos. Reddish-buff clay, black glaze. Lip glazed, band of tongues above foot. The scheme, which seems the same on both sides, is palmette, seated sphinx to the left, standing woman to the right, seated draped figure to the left, standing draped man to the left, standing woman to the left, seated sphinx to the right, palmette. No incision or added colour. Attic.

F. RED FIGURE

There is no early Red Figure. Mr. P. E. Corbett informs me that the fragments no. 3 are certainly, and those no. 2 probably, Attic. He considers that the fragments no. 1 are not of Corinthian ware, and that details such as the lower border and volute on (*c*) and the uncertainty in the drawing of the drapery on (*a*) make it doubtful whether they are Attic. No. 4 is Corinthian.

Kraters.

1. Fragments of belly. The body is that of a bell-krater and rests on a high hollow stem which flares outward at the bottom; no piece with the characteristic profile of a bell-krater foot has come to light. Buff clay, not reddish, in places badly smoked; glaze black, discolouring to purple; *miltos* applied thickly, producing a crimson tone on the clay ground. (*a*) Female figure. (*b*) Head of helmeted (?) man facing; left hand above head? (*c*) Stele (or herm) and palmette. The band below the figured field is abnormal. Argive? Early fourth-century. PLATE 22.

2. Several fragments of rims with r.f. laurel spray below lip. Diameter over 0·30 m.

3. Fragments of belly of bell-krater with meander strip below the figured panel; traces of drapery on several fragments.

Oinochoe.

4. Fragment of small trefoil-mouthed jug. Pres. H. 0·147 m. Fine pale clay; glaze black to streaky brown. A coat of *miltos* was applied on the neck-band and clay surfaces of the figure panel; where the glaze has perished the pale clay of the surface makes a strong contrast with the *miltos*. Boy, carrying robe and stick, apparently stepping on to a low plinth. Corinthian. PLATE 20.

G. BLACK-GLAZED WARES

The earlier black glaze seems largely Attic (*e.g.* nos. 3, 4, 6). The later ware is probably of local manufacture; the appearance of the kotyle in preference to the cup-kantharos and cup-kotyle suggests that the Argive fourth-century production drew its inspiration from Corinth rather than from Athens.[52]

Kylikes.

1. Two feet of comast-cup type.[53] Sixth-century.

2. Foot. Diameter 0·067 m. Clay pale buff, not Attic; irregular brown glaze. Upper part of stem not glazed and faintly ridged. From a cup with offset lip; *cf.* a very similar piece from Argos, *ADelt* XV 51, 20, fig. 5 right. By comparison with Attic (*e.g.* Bloesch, *Formen Att. Schalen*, pl. 40) this piece should be early fifth-century.

3. Short-stemmed cup. Diameter at rim 0·184 m. Buff clay, uniform black glaze. Probably Attic, late sixth- or early fifth-century. FIG. 32.

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[51] The same group of figures, though with the addition of a second man on the right, appears on a skyphos of almost identical form, Corinth Mus. P1705.

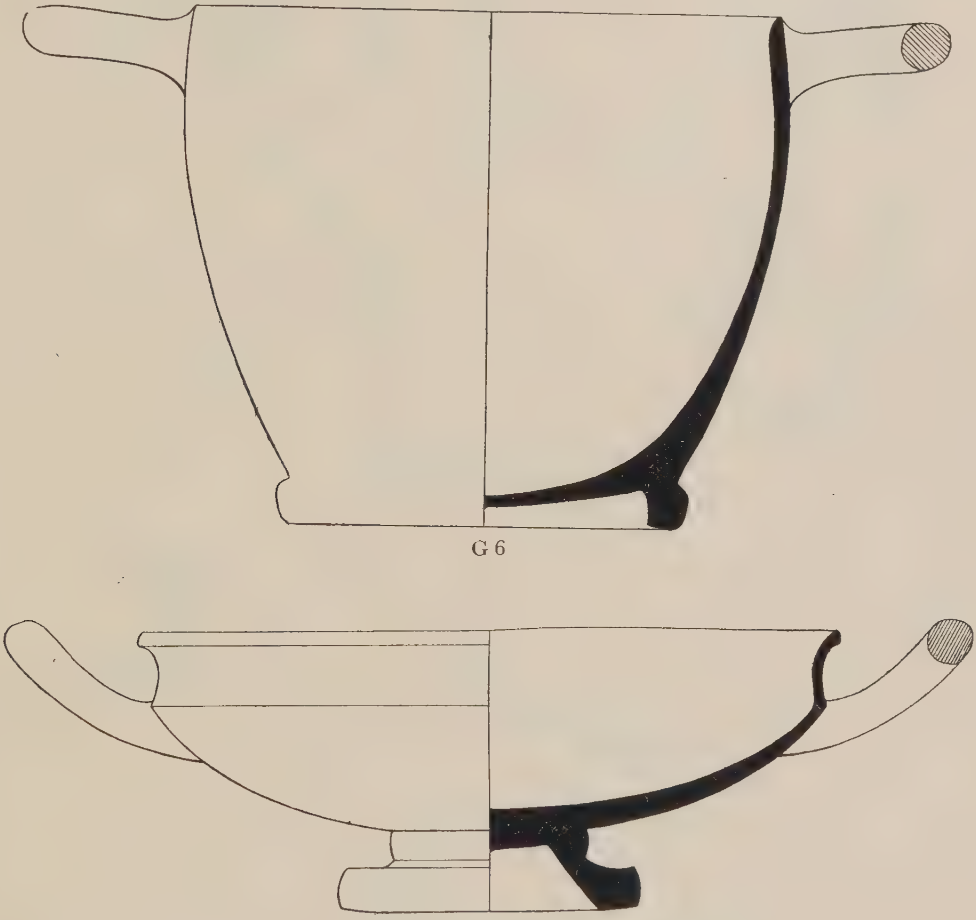
[52] *Cf.* the domination of Corinthian black glaze forms in Ithaca in the fourth century, whereas Ionic workshops followed the Attic.

[53] *Cf.* Greifenhagen, *Att. Schwarzfig. Vasengattung*, pl. 2, 2.

Skyphoi.

4. Fragmentary. H. 0·122 m. Clay and glaze as no. 3. Attic, of about first half of fifth century.

5. One complete vase and several small rim fragments. The complete one, diameter at rim 0·11 m. Buff clay; uniform, but not glossy, dark brown glaze; underside of foot plain. Cf. *ADelt* XV 42, fig. 24 top right (from Argos). Probably Argive. FIG. 33.


G 6

G 3

FIG. 32.—ATTIC BLACK-GLAZED VASES.
Scale 1 : 2.

Kotylai.

6. Fragmentary, of Attic type. H. 0·131 m. Clay and glaze as no. 3. Attic, dated by Mr. Corbett in the third quarter of the fifth century. FIG. 32.

7. Fragments of six or seven vases with exaggerated contracting profile, some with horizontal grooves on body; two of the three surviving handles have a pronounced horseshoe shape in plan. Average H. estimated at 0·16 m. Clay buff, lack-lustre dark brown glaze all over; four feet are glazed on the underside, one has glaze rings. The high pitch of the belly and glazing of the underside of the foot perhaps suggest a date not early in the fourth century; the exaggerated bulge of the body is found also in a black-glazed kotyle from a tomb at the Argive Heraeum [54] and may therefore be normal in Argive black glaze. Probably Argive. Composite section. FIG. 33.

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[54] Blegen, *Prosymna* II, fig. 498, no. 108.

Lekane-lid.

8. Nearly complete. Diameter 0·12 m. Clay and glaze as in the skyphos no. 5, on which the lid fits well. *Cf.* a lid from Argos, *ADelt* XV 43, fig. 25. Probably Argive, about early fourth-century. FIG. 33.

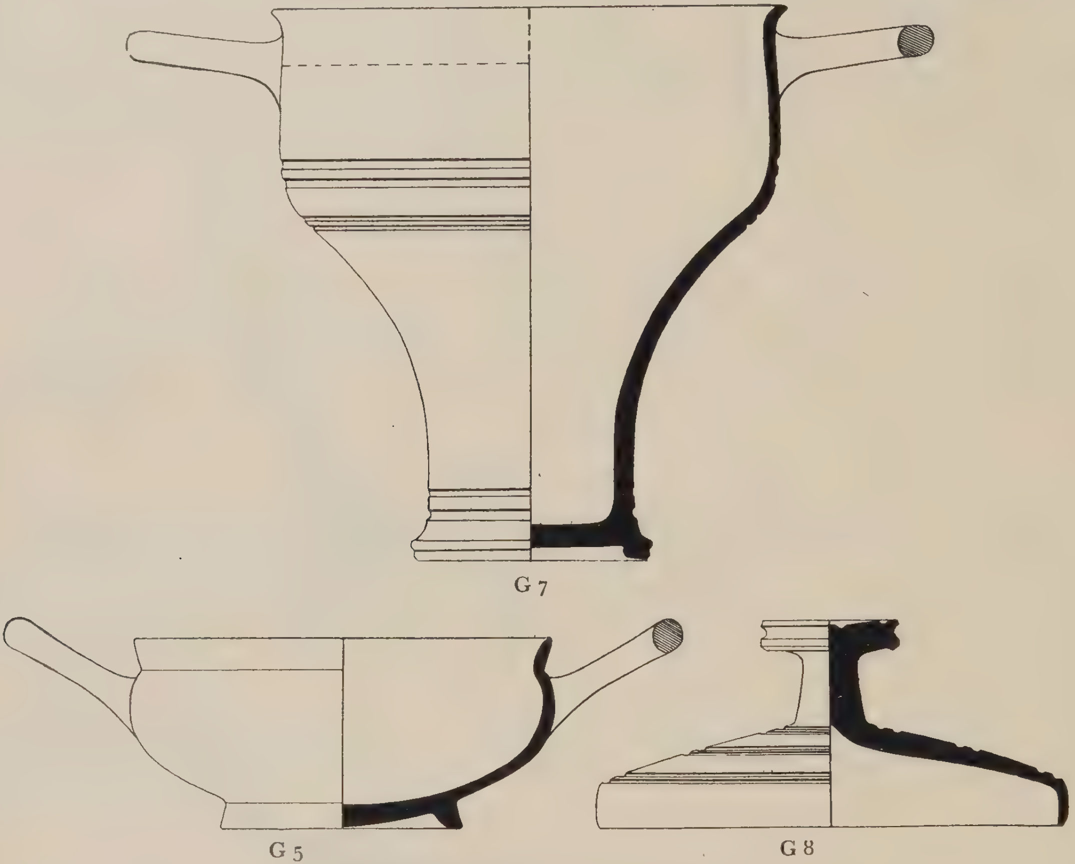

FIG. 33.—ARGIVE BLACK-GLAZED VASES.
Scale 1 : 2.

H. MISCELLANEOUS VASES AND CLAY OBJECTS

1. Fragment of big krater with high rim. Diameter 0·32 m. Pale buff clay; patterns in badly faded glaze and purple paint; glazed inside. FIG. 34.
2. Monochrome globular jug of common Argive type. H. 0·08 m. Fine ware, grey in biscuit; pared surface, cream wash. Very similar to *Hesperia* XXI 205, no. 282, pl. 58.
3. Fragment of larger jug with flaring mouth and ribbon-handle; grey ware with ochre wash; for the ware *cf.* Caskey, *Hesperia* XXI 203, n. 46.
4. Handmade bowl with three club-feet. H. 0·07 m. Coarse pale clay, unglazed. FIG. 34.
5. Lydion. H. 0·073 m. Micaceous buff clay, lustrous brown glaze. Probably East Greek, second half of sixth century B.C. FIG. 34.
6. Two small fragments of a small incised handmade crock. This ware does not closely correspond to the Argive 'Pie Ware' (which is absent on this site, and is probably to be dated before *c.* 700 B.C.), but is matched by an archaic fragment from the Heraeum, *Hesperia* XXI, pl. 59, no. 303.
7. Inconsiderable fragments of cooking-pots and other domestic wares; some of these, found in surface levels, come from jars with horizontal ribbing which seem to be of Late Roman or Byzantine date.
8. Two conical loomweights.[55] H. 0·066 and 0·104 m.
9. Bobbin with two impressed circles on one end.[56]

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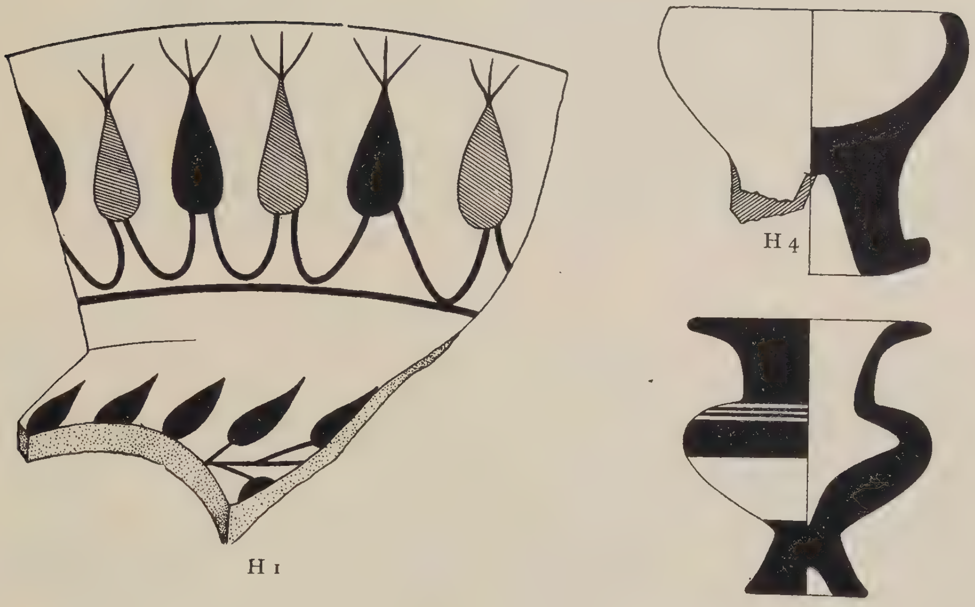
[55] The smaller one corresponds to Mrs. Weinberg's Profile 3 (sixth to early fifth century), and the larger approximates to her Profile 10 (about Early Hellenistic), *Corinth* XII 148 ff.

[56] Cf. *AE* 1937, 384 fig. 8.



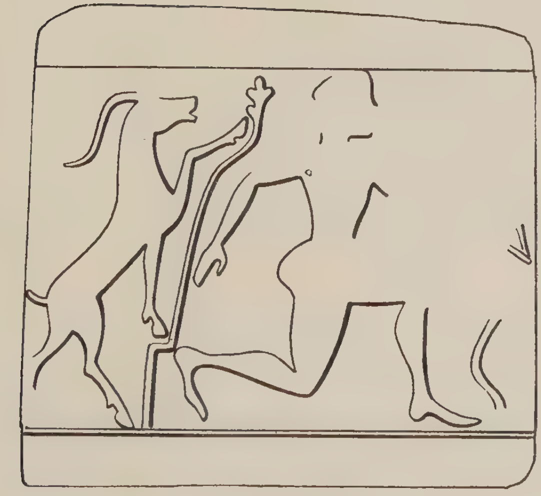
H 1

H 4

H 5

Fig. 34.—Miscellaneous Vases.

Scale 1 : 2.



H 12

Fig. 35.—Terracotta Plaque.

Scale 1 : 1.

10. Nozzle of lamp of long-nosed fourth-century shape. Unglazed.

11. Two small scraps of West Slope ware; ivy scroll with incised stalks and leaves in thinned clay.

12. Relief plaque. Complete but bruised at right end. H. 0·062; breadth at bottom 0·071; thickness 0·01 m. Pale clay like Corinthian, no trace of colour. Within raised borders at top and bottom, goat feeding on bush; man in kneeling position behind a tree, *cf.* the left-hand figure in the top register on the bronze relief *Perachora* I 147, pl. 49, 2–3. Peleus breaking cover? For Argive archaic terracotta plaques cf. *AH* II 47 ff., Vollgraff, *Opgravingen te Argos*, pl. 8, Kunze, *Olympische Forschungen* II 229 f.; a fifth-century one, *ADelt* XV 30, fig. 15, 2. FIG. 35.

13. Fragment of perforated relief plaque. Preserved edges except on the left; surface worn. H. 0·068; pres. breadth 0·045; thickness 0·007 m. Buff clay, no trace of colour. The relief is undoubtedly produced with the four-figure stamp used on the basin rim from the Argive Heraeum, *Hesperia* XXI, pl. 72, where the modelling of the body retains its original crispness. Perseus in flight; to left, legend -ΡỌṆ? For the subject *cf.* Miss Hersom *Hesperia* XXI 275 ff. PLATE 22.

14. Incomplete relief panel, three corners preserved. H. 0·013; breadth 0·023; thickness 0·0065 m. Pale clay. Three tongues impressed on upper surface. Cf. perhaps the larger sima fragment *AA* 1937, 95, fig. 44. PLATE 22.

I. TERRACOTTA FIGURINES

Seated Goddess Types.

1–10. There are about fifty specimens.[57] The fabric is the normal buff to ruddy Argive, sometimes undercooked and blackish in the core; a very few fragments of primitives are paler but are nevertheless Argive.

The majority of the heads are handmade with bird-faces (nos. 1, 3, 5, 7 etc.). About one-third of the bodies are of the photograph-frame type (as nos. 2-3), with a plank-like body bent over at the waist and two legs supporting the posterior. The remainder were modelled in two pieces, the figurine (which is generally contracted at the waist) being planted on a four-legged chair (*e.g.* nos. 1 and 4): the seat may simply have a low back, or it may come round to form sides like a basket chair. There is no trace of the applied chiton-overfold common in the female figurines of Tiryns. Both one- and two-piece seated figures are found with bird-faced heads (the very elaborate bird-faced one no. 5 being apparently two-piece); and similarly, both types of body are found with the moulded archaic faces; there seems to be no chronological significance in these distinctions. There are faint traces of a chalky white slip on one or two bird-faced pieces (perhaps only those of the photograph-frame type, *e.g.* no. 3). On others (*e.g.* nos. 2 and 5) there are faint traces of glaze on the clay ground.

The heads are usually unworked at the back; no. 1 has twisted tresses applied on the back of the neck, no. 5*b* coils, and no. 5 has the hair divided chequerwise by incision on the back of the head.[58] The faces of the bird-faced figures consist of a nose pinched out by hand and pellets added for the eyes; R. J. H. Jenkins has remarked that this type of face seems to have remained without further development over a period of at least a century and a half.[59] Of the mould-made heads, no. 2 resembles an early Middle Corinthian sequence;[60] no. 6 seems to belong to Jenkins' ornate Group[61]; no. 10, of pale yellowish ware, is almost certainly of

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[57] For Argive primitives, *cf.* Argive Heraeum: *AH* I 44, fig. 17 f.; II 16 ff., pls. 42 ff.; *AJA* XLIII 422, fig. 10; *Hesperia* XXI 184 f., pl. 48. Mycenae: Winter, *Typen* I 26. Argos: *BCH* XXX 37, fig. 64 f.; XXXI 156, fig. 5; Vollgraff, *Opgravingen te Argos*, pl. 8; in vicinity of Argos, *BCH* XXXI 180. Tiryns: Schliemann, *Tiryns* 150 ff., nos. 70 ff., 359 ff., nos. 159 ff.; *Tiryns* I, pl. 1 ff., Epidauros: *PAE* 1948, 105, fig. 9, 108, fig. 12; 1949, 98. Asine: Frödin-Persson, *Asine* 334, fig. 225. Troezen: Welter, *Troizen u. Kalaureia*, pl. 9. Hermione: *cf.* Frickenhaus, *Tiryns* I 52. Klenies: cf. *BSA* XXXII 23 n. 5. A fifth-century series from graves at Argos, *ADelt* XV, 22, fig. 6 ff. Aegina: Furtwängler, *Aegina*, pl. 111, 5 f. Corinth: *AJA* 1939, 598, fig. 9 (centre)? Perachora: *Perachora* I, pls. 109–111. Tegea: *BCH* XLV 424, fig. 63, no. 346; Winter, *Typen* I 26 f.; *BSA* XXXII, pl. 16, 2, 6; *BMC Terracottas* 77 f.: Breitenstein, *Cat. Terracottas, Copenhagen*, pl. 20, nos. 183–4. Halae: *Hesperia* IX 466, fig. 158 (*cf.* Jenkins, *BSA* XXXII 32 n. 1). *Cf.* also Mrs. Stillwell, *Corinth* XV ii, 31 f. These primitives are associated with the cult of male as well as female beings (*e.g.* Apollo Maleatas at Epidauros).

[58] For the two coils of hair on the brow cf. *AH* II 20, fig. 19.

[59] *BSA* XXXII 24.

[60] *Cf.* Payne, *Necrocorinthia* 306, nos. 880–82; for the treatment of the hair cf. *Perachora* I, pl. 94, no. 94.

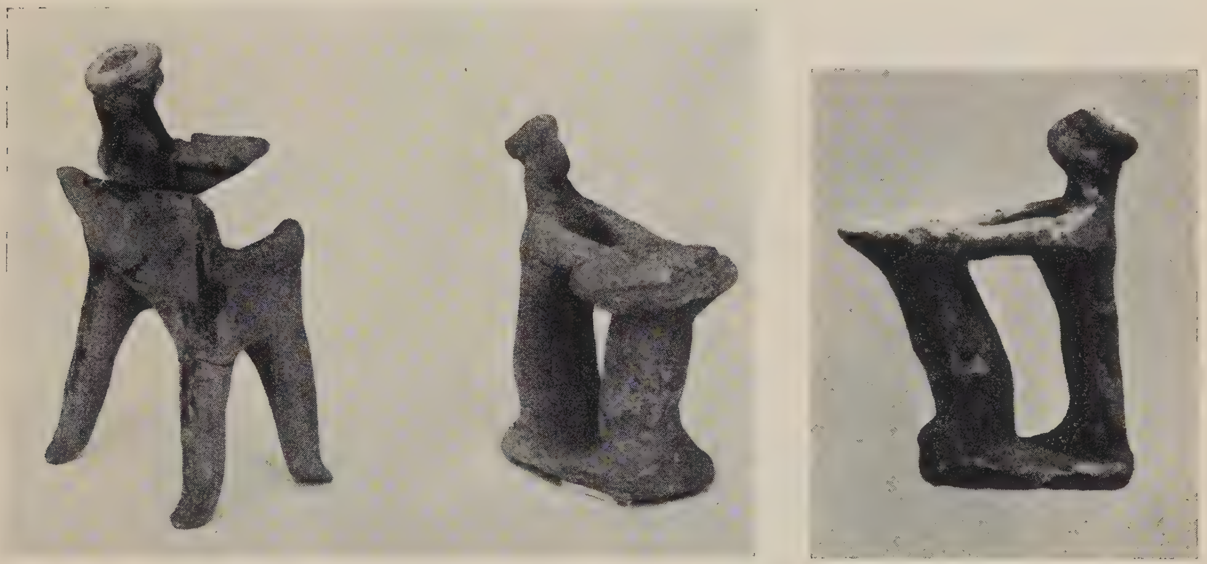
[61] Cf. *BSA* XXXII, pl. 15, *Perachora* I, pl. 110, nos. 245 and 247; Tegea (unpublished).

Corinthian manufacture and dates towards 575 B.C.[62] No. 8, of reddish Argive ware, probably belongs to the same series as no. 6.[63] PLATE 22.

Enthroned Goddess.

11. The figure is seated on a backed throne and is unusual among Argive figurines.[64]

Ring-polos on head, pigeon on right hand. H. 0·088 m. Light buff clay; black glaze, as on the protomes (B 31), covering the skirt, hair, crown of head, back of chair (with slanting glaze stripes on the back panel), black dots on necklace, eyes, bird. The face is handmade, but its outline has been shaped with an instrument. Sixth-century. PLATE 22, FIG. 36.



I 11 I 12

FIG. 36.—TERRACOTTA FIGURINES.

Kneading Women.

12. One complete figurine and two small fragments were found.[65]

The complete figurine: H. 0·072 m.; pale clay, faint traces of glaze on clay ground. FIG. 36.

Mould-made Figurines.

13–15. Three solid moulded figurines, unworked on the back. Reddish clay, no. 13 undercooked and grey in the core. No. 13 late archaic,[66] nos. 14–15 classical. PLATE 23.

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[62] *Cf.* Corinth KT 9–16 (*Corinth* XV ii, pl. II, VIII 39), and one mould-generation earlier, *Corinth* XII, pl. 5, no. 77.

[63] Mr. R. V. Nicholls has kindly given me advice and comparisons for these pieces, as also for the protomes (B 31).

[64] A similar example *AH* II, pl. 44, 1. A Mycenaean precursor *Ann.* XXIV–XXVI 15 figs. 1–4.

[65] Cf. *AH* II 18, fig. 15, Schliemann, *Tiryns* 149, no. 76, *Tiryns* I 83, fig. 21, *Perachora* I, pl. 111, no. 264 f.; *cf.* also Mrs. Stillwell, *Corinth* XV ii 207.

[66] *Cf.* the Attic head *Hesperia* VII 202, fig. 36, A.F. 584.

Riders.

16–21. Twenty-five pieces are attested, while a further twenty fragments come from horses which may have been ridden.[67] All are handmade, and the human heads (with the exception of no. 17) are bird-faced with pellet eyes. The figurines can be divided into two classes. The first (nos. 16–18) has patchy painting in dark glaze on a buff ground; some fragments of animal bodies that may perhaps belong to riders have linear painted decoration similar to that of no. 22. The second class (nos. 19–21) is of friable reddish or grey-brown ware and had a fugitive chalky white slip; no. 21, which by exception is of very pale ware, still retains considerable traces of linear decoration in purple paint on the slipped surfaces of the rider and the front part of the horse.[68] Armed riders are found in the slipped ware only; one fragment (no. 19) has a peaked helmet like those on the Penthesileia shield from Tiryns,[69] and three shields of hoplite type also came to light (*cf.* no. 20, where it is clear that the hand is holding a grip at the rim). PLATE 23.

Animals.

22–25. Apart from horses and horse-like bodies which may belong to rider figurines, there are a mule (H. 0·038 m., no. 22, FIG. 37), and a fragmentary bull decorated with painted stripes on the clay ground; a goat (no. 23),[70] dog (no. 24),[71] three or four fragments of rams and bulls in friable slipped ware,[72] and apparently also a fragmentary pigeon. The pig (no. 25) is a one-sided silhouette cut out of a flat strip; the leg and ear-lump have been added, and the eye is indicated by a notch. PLATE 23, FIG. 37.

Wreaths.

26. Two were found, crimped and skimpily painted on the clay ground.[73] PLATE 23.

J. CULT INSCRIPTIONS

1. Incised on rim of bowl or krater. Diameter of vase at rim 0·30 m.; breadth of rim flange 0·027 m. Buff ware, poor dark glaze on inside of vase and upper surface of lip, exterior plain except for flecks of glaze.

'Αγ]αμέ{ν}μνο *vac.*[74]

Another fragment (a floater) from the rim of this vase is uninscribed; the maximum for the number of letters preceding the surviving ones is ten. FIG. 38.

2. Small fragment of rim of another krater, similar in all respects except that the glaze is a good lustrous black.

- - ο̣ν - -.

The uprights of the *ny* are slightly more slanting than on no. 1.

In no. 1 the bar of the *alpha* is horizontal and set high;[75] and the right oblique oblique stroke of the first *my* carries up beyond the point of convergence with the right-hand upright. The letters may be of the fourth century or early Hellenistic. The good glossy glaze of the small fragment no. 2 suggests a pre-Hellenistic date. The fragments were found in the archaic deposit below the Hellenistic floor level.

3. Two fragments of the rim of a large basin, the outer edge crimped. Diameter at rim *c.* 0.42 m. Rough in the core and incorporating particles of stone; clay buff, traces of poor black glaze on exterior. The letters were drawn with a

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[67] For Argive rider figurines, *cf.* Argive Heraeum: *AH* II 16, fig. 1, pl. 48, no. 245; *AJA* XLIII 421, fig. 11. Mycenae: Schliemann, *Mycenae*, pl. 19, no. 110; Winter, *Typen* I 25, 3. Argos: *BCH* XXX 37, fig. 63. Tiryns: *Tiryns* I 83, fig. 20. Asine: Frödin-Persson, *Asine* 309, fig. 213, 334, fig. 225. Epidauros: *PAE* 1948, 105, fig. 9, 108, fig. 12. Kalauria: *AM* XX 317, fig. 33. Lerna: Caskey in Γέρας Κεραμοπούλλου. Perachora: *Perachora* I, pl. 100, nos. 166–7?

[68] The paint itself hardly visible in PLATE 23 on account of encrusted mud, from which it is almost inseparable.

[69] *Cf.* Lorimer, *BSA* XLII 134, pl. 18 A*a*.

[70] Also a second, crouching and with head raised, from the 1952 excavation.

[71] *Cf.* Epidauros, *PAE* 1948, 105, fig. 9.

[72] The slip may not normally have been carried over the hind quarters (*cf.* no. 23, PLATE 23).

[73] Cf. *BCH* XLV 407, fig. 54; *AJA* XLIII 421, fig. 11.

[74] The join after the *omikron* is certain.

[75] *Cf.* the early vase-inscription *IG* IV 1341, and the stele from Ligourio dated in the latter part of the fourth century, *Hesperia* VII 537, fig. 8.

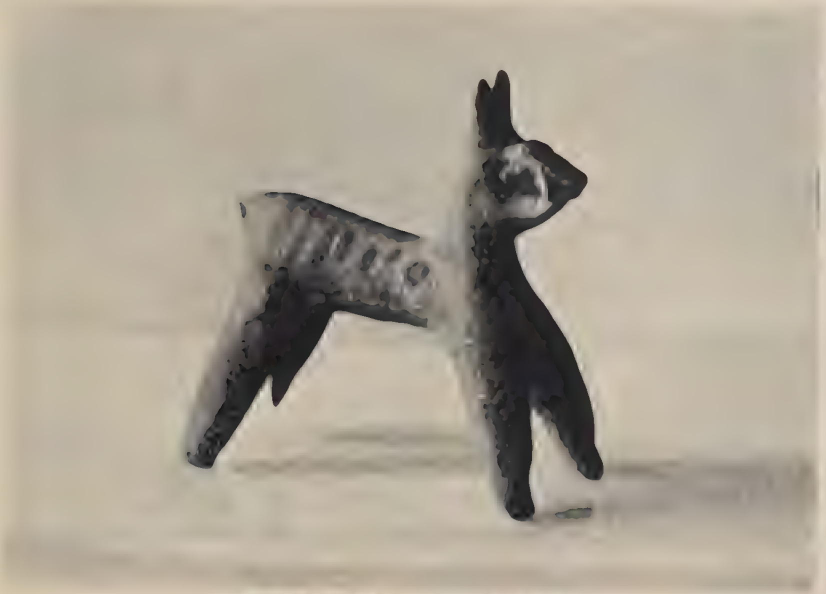


Fig. 37.—Terracotta Mule.

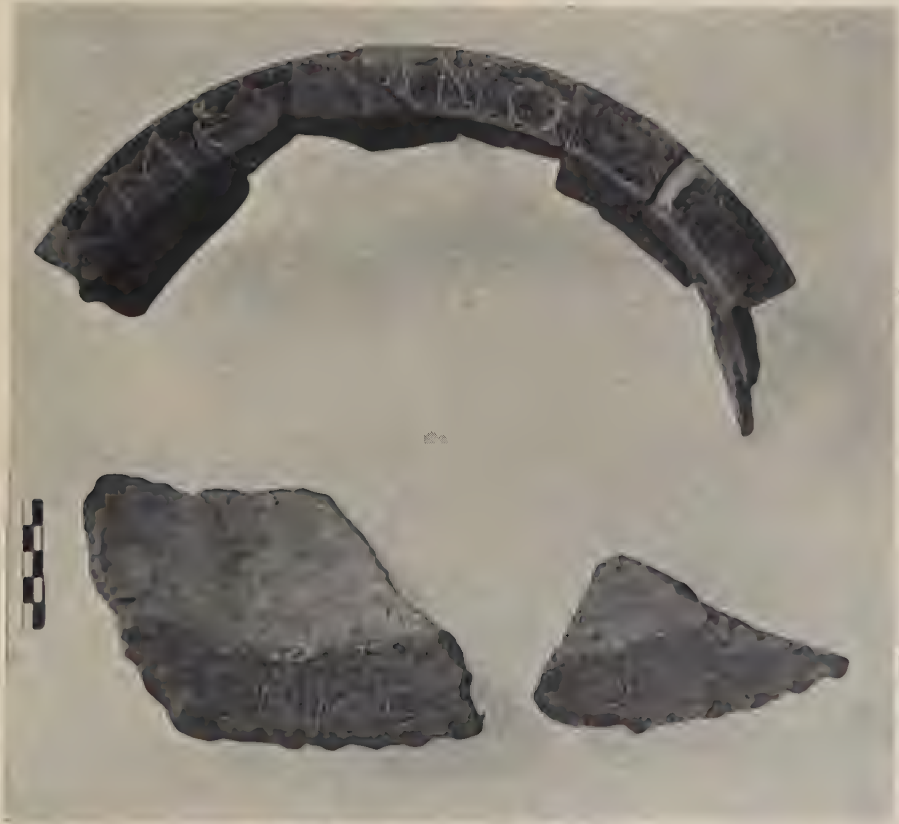


Fig. 38.—Inscriptions on Vases.

broad point before firing and enhanced with thin paint; double points have been punched at the apices of the letters. H. of letters 0·015 m.

(*a*) - - νονι τ̣ - - [76] (*b*) - - εθηκε *vac.*

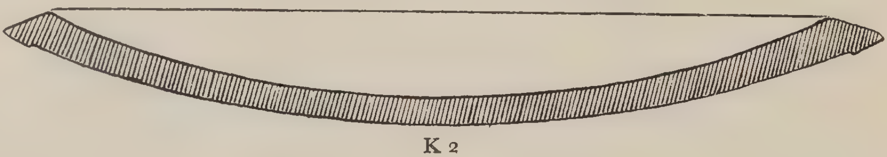
Ἀγαμέμ]νονι τ̣[- - - - ἀν]έθηκε. The letter τ̣ may introduce the dedicator's name, which normally follows that of the divinity in classical dedications at Argos and Mycenae; an alternative restoration is τ̣[ὴν φιάλην - -. One fragment was found as the Hellenistic floor level was being reached, the other apparently among the debris of Hellenistic tiles; the dedication should therefore belong to the remodelled sanctuary. Mr. Mitsos gives a date in the first century before or the first century after Christ.

There appears to be no alternative to the reading of forms of the name Agamemnon in these inscriptions, and the identification of the shrine, both before and after the Hellenistic remodelling, is thus established. It is not clear whether the form of the name on no. 1 is incomplete or a second-declension genitive.[77]

K. TILES

Archaic.

1. Two baskets of fragments of thick flat-tiles. Porous green clay with numerous particles of stone; a few fragments are brownish in tone and contain particles of ground terracotta. For the type *cf.* the late archaic tiles from Corinth, *Hesperia* VII 611.



K 2

FIG. 39.—SECTION OF TILE.

Hellenistic.

2. Pieces of more than twenty flat tiles (about six baskets), all tiles being inscribed. Firm buff-reddish clay, in many cases showing traces of red glaze which originally covered the inscribed upper side. The width of two tiles recovered, *c.* 0·45 and 0·50 m.; length *c.* 0·85 m.

The normal legend, scrawled in two lines along the whole length of the tile as a safeguard against theft, is Δαμόσιος | Ἀργήων; the word Ἀργήων is recognisable thirteen times in the lower position and twice in the upper, while δαμόσιος is recognisable fifteen or sixteen times in the upper position against two in the lower. Five more or less complete examples of a stamped inscription with depressed letters Ἐπὶ Ἱκετίνου ἐπό|ησε Κλεώνυμος occur; the stamp is 0·145 long and 0·032 m. high; it is set near the left end of the tile, its position being fixed in at least three examples below the *delta* in the inscribed word δαμόσιος. The date is normally given by ἐπὶ Ἱκετίνου on the stamp: but four pieces, which may have been unstamped, have the legend ἐπὶ Ἱκετίνου inscribed on the tile, three times in the lower position, and once in the upper (with δ̣[αμόσιος] in the lower). The legends seem mostly finger-drawn; in a few cases a thinner point has been used.

The lettering of the inscribed legends is Hellenistic.[78] The forms used do not necessarily imply a date late in that era, since all the cursive traits found here were current in writing on clay before the middle of the second century B.C.[79] The lettering on the stamps, being originally cut in a harder material,[80] remained more conservative, and cursive forms are therefore still absent; the comparison with Sparta, where the stamps on public tiles dated in the second century B.C. are almost equally devoid of cursive forms (whereas those dated in the first century B.C. exhibit lunate letters and minuscule *omega*) [81] suggests a date hardly later than the second century B.C. for the tile-stamps of the Agamemnoneion. Section of tile FIG. 39. Sample inscriptions FIG. 40.

L. METAL OBJECTS

Bronze.

1. Rosette. Diameter 0·04 m. FIG. 41.
2. Annular brooch, complete except for the tip of one coil. Diameter 0·06 m. From the archaic deposit. This Western European type is rare in Greece; cf. *AH* II, pl. 88, no. 947, and perhaps *BCH* XLV 367, fig. 20, no. 169 (Tegea). FIG. 41.

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[76] The second *ny* is clear on the sherd.

[77] Shorter forms in the oblique cases of proper names in -ων are not infrequent at Corinth and in the Argolid, though no contraction corresponding to that found here has been noted; *cf.* Ποτε(ι)δᾶ *IG* IV 237; the accusative Ἀπόλλω, *IG* IV i^2 128, 19, LS^9.

[78] Similar inscribed tiles have been found at the temple of Athena on the summit of the citadel at Mycenae and near the Lion Gate (*BSA* XXV 37). Tiles from other sites in the Argolid (Argive Heraeum, Argos, and the Asklepieion of Epidauros) seem generally to bear stamped inscriptions only, but scraps with hand-drawn inscriptions have come to light on the site of the pyramid by Ligourio (*Hesperia* VII 536, fig. 7*b*–*c*).

[79] *Cf.* Wilhelm, *ÖJh* VII 106 ff., and among recent finds the inscribed vases from the South Stoa deposit at Corinth (*AJA* XXXIX 71, fig. 15; *Hesperia* XVI 240, pl. 59; *Hesperia* XVIII 152, pl. 16) which are prior to the destruction in 146 B.C. The cursive forms do not seem to have occurred on the inscribed kantharoi of the fourth century at Corinth (*Hesperia* XVII, pl. 88, no. 6).

[80] Perhaps wood, as at Sparta and Delos (*cf.* Wace, *BSA* XIII 16).

[81] *Cf.* Wace, *loc. cit.*, with chronology *ibid.* 43.

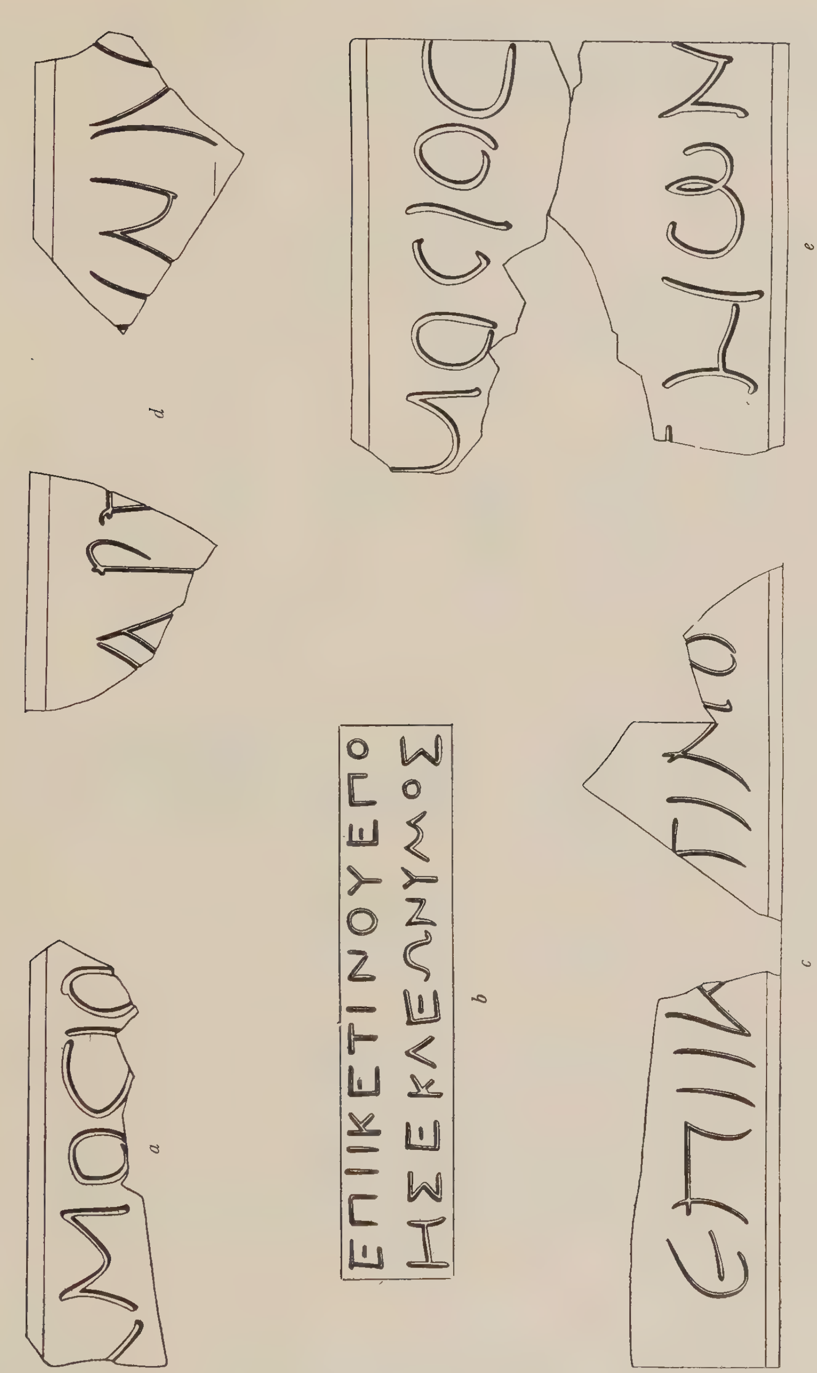
a
b
ΕΠΙΚΕΤΙΝΟΥΕΠΟ
ΗΣΕΚΛΕΛΝΥΜΟΣ
c
d
e

Fig. 40.—Inscriptions on Tiles.
Scale 1 : 8. (*b*, 1 : 2.)

3. Pin. FIG. 41.
4. Fragments of small handles and of several small vessels in thin bronze, too perished for restoration. FIG. 41.
5. Small leaf-shaped arrow-head with tack-hole. Length 0·036 m. FIG. 41.
6. Two imperial bronze coins of the Constantinople mint.

(*a*) Size 0·026 m.	Leo VI.	As *BMC Imp. Byz. Coins*, 447 no. 8.
(*b*) Size 0·027 m.	Romanus I.	As *BMC Imp. Byz. Coins*, 456 no. 19.

Both coins were found in surface earth.

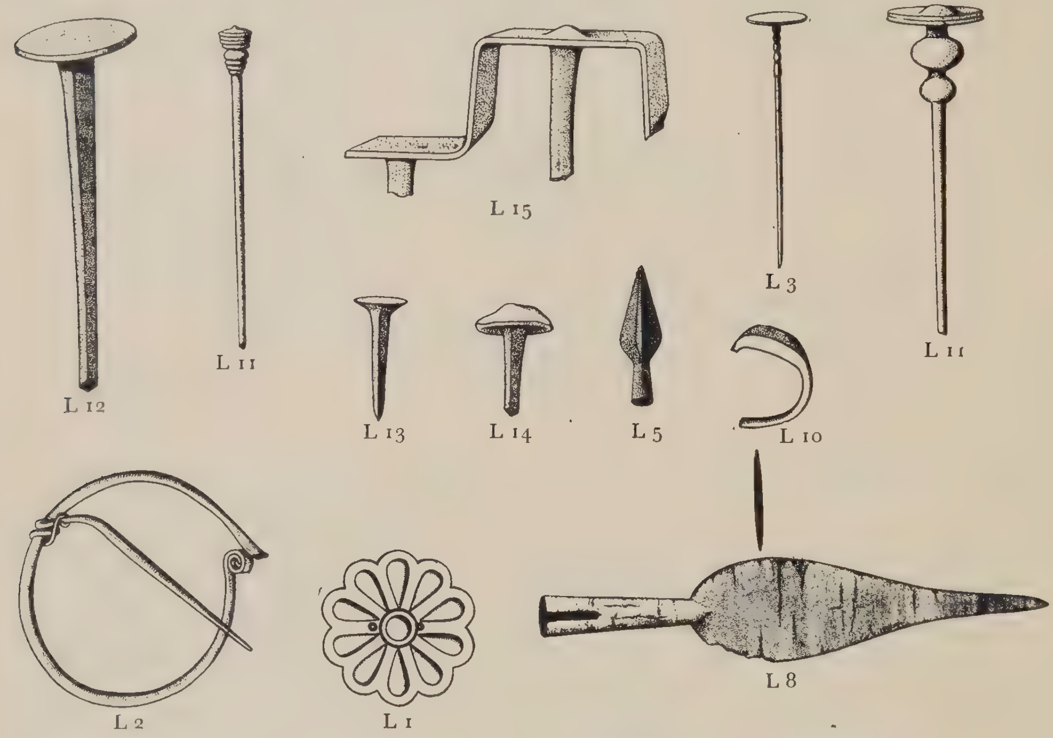

Fig. 41.—Metal Objects.
Scale 1 : 2. (L 8, 1 : 4.)

Lead.

7. Irregular disc, flattened on one side, convex on the other; two suspension-holes near edge. Diameter *c.* 0·08 m.; thickness in centre 0·008 m.

Iron.

8. Ribless socketed spearhead. Length 0·26 m. FIG. 41.
9. Knife blade, tip missing; two rivets for handle. Pres. length 0·22 m.
10. Finger-ring with flattened bezel, incomplete. Internal diameter 0·017 m. FIG. 41.
11. Two pins. FIG. 41.
12. Four four-sided cut nails, as FIG. 41.
13. Four-sided tack. FIG. 41.
14. Five studs, as FIG. 41.
15. Fitting of door or chest. FIG. 41.

J. M. Cook

PART IV. THE EPANO PHOURNOS THOLOS TOMB

(PLATES 24–28)

1. INTRODUCTION

THE tholos tomb, known as the Epano Phournos (see Plan, FIG. 42 and photographs PLATE 24), is one of the five tholos tombs which were known at Mycenae when modern archaeological research began there with Schliemann's excavations in 1876. The other four are: the Treasury of Atreus, the Lion Tomb, the Kato Phournos, and the Tomb of Clytemnestra. All these are marked on Schliemann's plan [1] and that of Steffen,[2] and the first three with the Epano Phournos were seen by Leake and Gell.[3] Thus the Epano Phournos, especially since it stands high on the top of the ridge, has probably been known for many centuries, and has often no doubt been subject to the activities of treasure seekers. It was first excavated by Tsountas in 1892, who says he cleared it.[4] It is not absolutely certain that the Epano Phournos is the tomb referred to by Tsountas, but it is most probable. He seems to have cleared the dromos and the front of the doorway and to have dug into the centre of the ruined tholos. He makes no mention of any finds from the tomb, and no objects from it seem to be recorded in the National Museum at Athens. In 1922 [5] in our re-examination and planning of the tholos tombs we cleared the dromos again and excavated the doorway as far as could be done with safety. It was impossible to clear the whole doorway because, owing to the collapse of the north-west jamb of the doorway, the innermost lintel block had fallen across it, effectively blocking entrance to the tomb. At the same time it was thought undesirable to attempt to excavate the tholos owing to the dangerous state of the ruined circle and the difficulty of removing the débris within. In clearing the doorway we found a part of a fine Palace Style amphora [6] of early L.H. II date and some small objects, an amethyst bead, an amber bead, a fragment of ivory inlay, and a small amount of gold leaf. These presumably had all belonged to the original contents and had been dropped by the plunderers. There were also twenty-two sherds of L.H. II pottery, about fifty L.H. III pieces, and eighty-eight fragments of Geometric and ordinary Hellenic ware, principally the former, and a small clay spool which might be Mycenaean.

Some time later, and before 1939, the Greek Archaeological Service raised the fallen inner lintel and supported its western end with a short baulk of timber resting on the stones of the fallen jamb. Even thus, excavation of the tomb was impossible, because any attempt to clear the doorway and tholos would have disturbed the fallen jamb stones on which the timber rested and would have threatened the safety of the raised lintel block. Our hope [7] that 'when the necessary mechanical means can be obtained the fallen jamb will be rebuilt and the tholos excavated', thus still remained unfulfilled.

A. J. B. W.
M. S. F. H.

2. THE EXCAVATION

In the summer of 1950 this hope was at last realised through the courtesy and interest of Professor Orlandos and Dr. Papademetriou, who permitted the technical experts of the Greek Archaeological Service, then engaged in restoring the so-called Tomb of Clytemnestra, to

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[1] *Mycenae*, pl. D.

[2] *Karten von Mykenai*, pl. I.

[3] Leake, *Morea*, II, pl. 4; Gell, *Itinerary*, pl. 3.

[4] *PAE* 1892, 56 f.

[5] *BSA* XXV 292 ff.

[6] Wace, *Mycenae*, pl. 67*c*.

[7] *BSA* XXV 292.

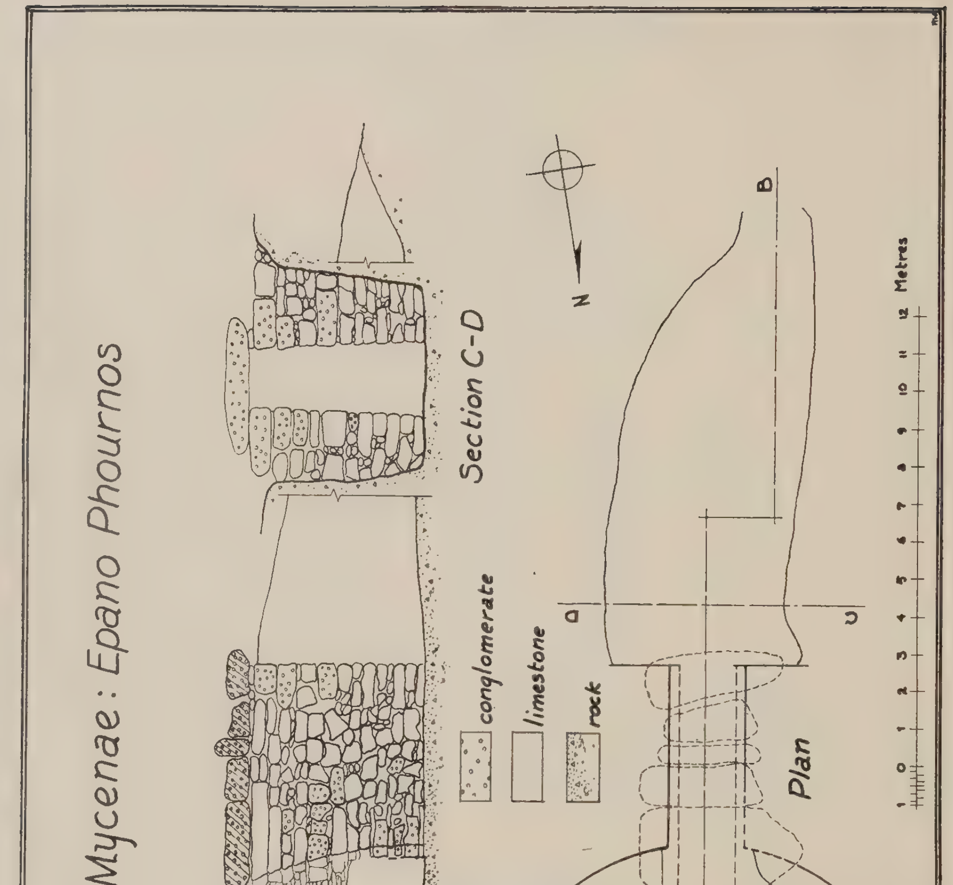
Mycenae: Epano Phournos
Section C-D
Section A-B
Line of fallen rubble
Section through A
conglomerate
limestone
rock
N
A
B
C
D
Plan
line of fallen rubble
Sinkings in floor
A
Area of pebble floor
1 0 1 2 3 4 5 6 7 8 9 10 11 12 Metres

FIG. 42.—PLAN AND SECTION.

shore up the inner lintel with a stout timber resting on the rock floor (PLATE 24, *b*) and to remove the fallen jamb stones which blocked the entrance to the tholos. At the same time one of their number was deputed to remain on the spot during the excavations to advise as might become necessary for the safety of the work. The excavations were carried out in ten working days between July 11th and 22nd with a force of six to eight men.

The rest of the doorway, rather more than half the total length under the lintels, was now cleared. From the level of the floor were recovered a bit of a human jawbone and a few scraps of gold that had evidently strayed from the tholos. Also from the floor of the doorway came some relics apparently of the archaic period, an unusual terracotta head of a warrior wearing a tall, crested helmet (No. 30) and a handle attachment with rotelles (see p. 81). Their presence suggests that the floor of this inner or northern part of the doorway might have been still accessible in archaic times. If, however, a blocking wall still remained in place across the front, it is not easy to see how access [8] was obtained to this inner part of the doorway.[9]

It has been suggested that the terracotta head of a warrior might perhaps reflect some sort of cult at the tomb.[10] A few shapeless scraps of lead plate (No. 23) also found on the floor of the doorway might conceivably be fragments of lead votives of the type found at Sparta and elsewhere. The two rectangular cuttings [11] on the upper surface of the outer lintel block look as if they might have been intended to receive the bases of stelai or statues.[12] But there seems to be nothing specifically votive about the pottery of the Geometric and later periods from the débris in the collapsed tholos itself (see p. 80). All this later pottery came from the upper part of the fallen débris.[13]

On or immediately above the floor of the tholos itself nothing was found of any period later than the Mycenaean,[14] which is good evidence that the collapse of the dome had already occurred before the end of the Bronze Age.[15] The suspicion, indeed, that the tholos had collapsed at an early date led us to hope before excavation started that the contents of the tomb might remain more or less intact under the débris.[16] These hopes were raised at the very beginning of the work, when, on the removal of one of the fallen jamb stones and the clearing away of the earth from a hollow in the surface of it which had been resting downwards on the floor of the tomb, a large amber bead (No. 24) and fine leaf of gold (No. 18) were extracted. Beneath another of the fallen jamb stones lay a small bronze javelin head (No. 21).

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[8] These objects may have found their way in, not through the entrance, but from the other side after the collapse of the dome. This part of the doorway would have formed a sort of niche with the inside face of the blocking wall at its back.

[9] No doubt after the first plundering and the collapse of the tholos the tomb must have been attacked from time to time by greedy men in search of treasure. Traces of this can be seen in the second and third lintel blocks from the front. The third block has been turned on its side, and the second block has been shifted. This suggests that after the collapse of the tholos the tops of the lintels were laid bare and attracted the attention of treasure seekers, who believed that such large slabs must conceal gold. Thus archaic and even later pottery could easily have fallen in then or in later times through the gaps so made between the lintel blocks. The lamps found in the tholos tomb at the Argive Heraion in the grave pit in the tholos together with a classical tile suggest a possible period for a plundering of that tholos, *BSA* XXV 337. A. J. B. W.

[10] For a cult of the dead in chamber tombs in Mycenaean times, see Wace, *Mycenae* 15, in the Geometric period and later see Blegen, *Prosymna* 263, where mention is made of a deposit of early Greek cult material that might indicate a sanctuary on a terrace north-west of the Argive Heraion tholos tomb. There seems to have been no evidence of a cult in the Tomb of Aegisthus, *BSA* XXV 296 ff.

[11] Near the south-east edge of the lintel, see *BSA* XXV 294. They are only a few centimetres deep and measure about 0·30 by 0·15 m.

[12] These cuttings otherwise might have had some purpose in connection with the upper construction of the façade above the lintel. They could not otherwise have been made until the whole upper part of the tholos façade above the lintels had been destroyed. A. J. B. W.

[13] This must have often been burrowed into by tomb robbers. A. J. B. W.

[14] A small area in the south-west quarter of the tholos itself had evidently been cleared right down to the floor level by Tsountas, whose workmen had left traces of their activities in the shape of the neck of a glass wine bottle, the iron blade of a pioneer's axe, and a coin of George I of Greece dated 1882.

[15] Compare the tholos at Dendra, where the collapse of the dome during the eleventh century is inferred from the presence of sub-Mycenaean and protogeometric sherds at floor level, Persson, *Dendra* 11, 66 f.

[16] The tholos at Dendra—and apparently also that at Vaphio—had been entered and ransacked by plunderers before the collapse of the vault, but the pits below the floor had fortunately escaped their attention, Persson, *op cit.* 12; compare Tsountas, *AE* 1889, 139 ff.; Tsountas-Manatt, *Myc. Age* 130 f.

These fair beginnings, however, were deceptive. The tholos chamber had been most thoroughly ransacked before the complete collapse of the dome. The soft rock of the floor was everywhere riddled with small irregular pits (the most conspicuous appear on the plan, FIG. 42), except in the area of the jamb stones, some of which therefore might have begun to fall before the plundering had become complete, as the finding of the javelin head and other objects under them also suggests. The largest of these pits (A on the plan, FIG. 42), measuring about 1·50 m. long by 1·00 m. across and 0·40 m. deep, was dug into a particularly soft patch of rock, which may have enticed the ancient plunderers to suspect a grave or treasure pit like those found with their rich contents intact in the tholos tombs at Vaphio and Dendra. In the Epano Phournos, however, as in some other early tholoi at Mycenae there do not seem to have been any such pits.[17] The dead and their treasures had evidently been deposited above the floor of the tholos, which was paved with a layer of white pebbles like the tholos tomb at the Argive Heraion.[18] The white pebble paving was preserved in patches here and there. The rest of it had presumably been torn up by the plunderers in their futile search for concealed pits below.

From the floor of the tomb and from the pits dug by the plunderers, especially from pit A on the plan, came scraps of gold, enough to fill a small cigarette box, and a good many fragments of large Palace Style amphorae (Nos. 2–10, 13–16). Bits of bone, some certainly human, but some of them animal, occurred throughout the tomb in the plunder pits, in the lower part of the débris, and trampled into the floor. There was nothing, however, that could provide evidence as to the number or sex of those buried in the tomb. The only other objects which might have formed part of the original contents were a paste bead (No. 25), some scraps of bronze plate (No. 22), and a broken piece of boar's tusk that could have come from a helmet (No. 26).

Among the fragments of Palace Style amphorae there was none that obviously belonged to that found in the doorway in 1922, but those found in the tholos came from at least eight vases. One of these (No. 2) has a design ultimately derived from an imitation of conglomerate stone. Another (No. 3) with a rather similar pattern of spirals is closely paralleled by an amphora from a tomb at neighbouring Prosymna. Other motives of decoration include the double axe, the sacral ivy, and the hatched loop, patterns of characteristic types as found in such early deposits as the First Shaft Grave, the Tomb of Aegisthus, and the Kakovatos tholos tombs. The designs in general can be assigned to the early part of L.H. II, the L.H. IIA of Furumark's classification. There is nothing that need be later. The great vases from which these fragments come must almost certainly have formed part of the original furniture of the tomb. Their evidence fully confirms the attribution of the Epano Phournos to the earliest period of tholos building at Mycenae as suggested in 1922.[19]

One or two other groups of fragments may belong to vases which had formed part of the original tomb furniture. They include the rim and handle of a big jug or jar with a bold spiral pattern decoration (No. 12) and bits of a large vase with the hatched loop design in red (No. 11). In addition, many isolated sherds all Late Helladic or earlier were recovered from the floor of the tholos and the lower part of the fill. These had presumably found their way in when the dome began to collapse, but some may possibly come from vases that were in the tomb.[20] There was, however, no single fragment of a small, finely decorated vase that could obviously be attributed to the period of the construction of the tomb. The smaller vessels forming part of the tomb furniture had presumably been of metal, bronze, gold, or silver, as in the tholos at Dendra.[21] There was, moreover, no evidence for a continued or secondary use of the tomb as a burial vault. In this respect the Epano Phournos falls into line with what is known of the history of the other tholoi at Mycenae which all appear to have been ' royal ' tombs like that at Dendra, containing a few bodies and used perhaps for only a single occasion of burial.[22]

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[17] *I.e.*, the Cyclopean and Panagia tombs and, so far as is known, the Tomb of Aegisthus (*BSA* XXV 296 ff.) and Tholos B at Kakovatos (*AM* 1908, 307 ff.). In the Treasury of Atreus and in the Treasury of Minyas at Orchomenos there are side chambers. As will be seen from the plan (FIG. 42), it was not possible to clear the floor of the tholos right up to the edge owing to the danger that the wall might collapse. It is therefore just possible, but hardly likely, that a small pit might lie concealed under the débris in the unexcavated area as in Tholos C at Kakovatos, where there is a single-shaft pit measuring 2·00 by 0·75 by 0·50 m. deep, close by the wall of the tomb (*AM* 1908, 311, fig. 5).

[18] *BSA* XXV 333.

[19] *BSA* XXV 388; Wace, *Mycenae* 16, 45.

Three fragments of typical L.H. III female terracotta figurines (No. 29) recovered from the floor of the tholos may well have been introduced when the dome collapsed, and they do not provide any certain evidence for a cult at the tomb. The same is true of the pottery from the débris. This included twelve M.H. sherds [23] (one Yellow Minyan and four Mattpainted) and a good deal of miscellaneous L.H. pottery. A few pieces of fine painted ware had typical L.H. III designs, such as whorl shells. There were several kylix stems, but not enough of these or of fragments from any particular type of vase to suggest more than the natural accumulation of rubbish in the hollow caused by the collapse of the dome. But it is not impossible that the dome was still intact in L.H. III, and the tholos may have been plundered in that period. The upper part of the fill yielded a number of Geometric and later classical sherds which are discussed below.

M. S. F. H.

3. The Finds [24]

I. *Mycenaean*

A. *Pottery*

1. Palace Style Amphora (PLATE 28, *b*). Reconstructed from fragments found in the dromos and doorway in 1922 (*BSA* XXV 295, fig. 53; *Mycenae*, fig. 67, *c*). Decorated with large ' sacral ivy ' leaves with papyrus in the field. This vase is assigned by Furumark to L.H. IIA (*MP* 587, Type 15, 1; motives 12, r (' sacral ivy ') and 11, 30 (papyrus). For the papyrus compare especially *AM* 1909, pl. XX 1, from Kakovatos Tholos ' A '; cf. *BSA* XLVII 268, fig. 11, III 4, from a L.M. II tomb at Knossos. For the chequered bands *cf.* No. 8 below.

2. Fragments of a large Palace Style amphora (FIG. 43, 3, PLATE 25, *a*), Mus. No. 5393. The rim No. 13 (FIG. 43, 2)

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[20] Notably the false spout of a large stirrup vase, the flat top of which (0 085 m. in diam.) has a red band painted round the edge.

[21] Only two clay vases belong for certain to the period of the burial: a large stirrup jar and a beaked jug, the fragments of which were recovered partly from the floor of the tomb, partly from the pits. The kylikes mentioned (Persson, *Royal Tombs at Dendra* 66) are nowhere to be found in the detailed inventory of the pit contents. They are not figured, but from comparison made with a Zygouries vase (Blegen, *Zygouries* 153, fig. 143, Type 1*c*) they sound considerably later than and quite out of line with the other furniture of the tomb.

[22] Wace, *Mycenae*, 19; Persson, *Royal Tombs at Dendra*, 68; Dörpfeld, *Ath. Mitt.* 1908, 314.

[23] Including the curious strainer spout, No. 17.

[24] Abbreviations in addition to those ordinarily in use in the *Annual*:

Asine	Frödin and Persson, *Asine.*
Chamber Tombs	Wace, *Chamber Tombs at Mycenae* (*Archaeologia* 82), 1932.
Gournia	Boyd-Hawes, *Gournia*, 1908.
Korakou	Blegen, *Korakou*, 1921.
Mycenae	Wace, *Mycenae, an Archaeological History and Guide*, 1949.
MP	Furumark, *The Mycenaean Pottery*, 1941.
New Tombs at Dendra	Persson, *New Tombs at Dendra*, 1942.
Prosymna	Blegen, *Prosymna*, 1937.
Schachtgräber	Karo, *Die Schachtgräber von Mykenai*, 1930–33.

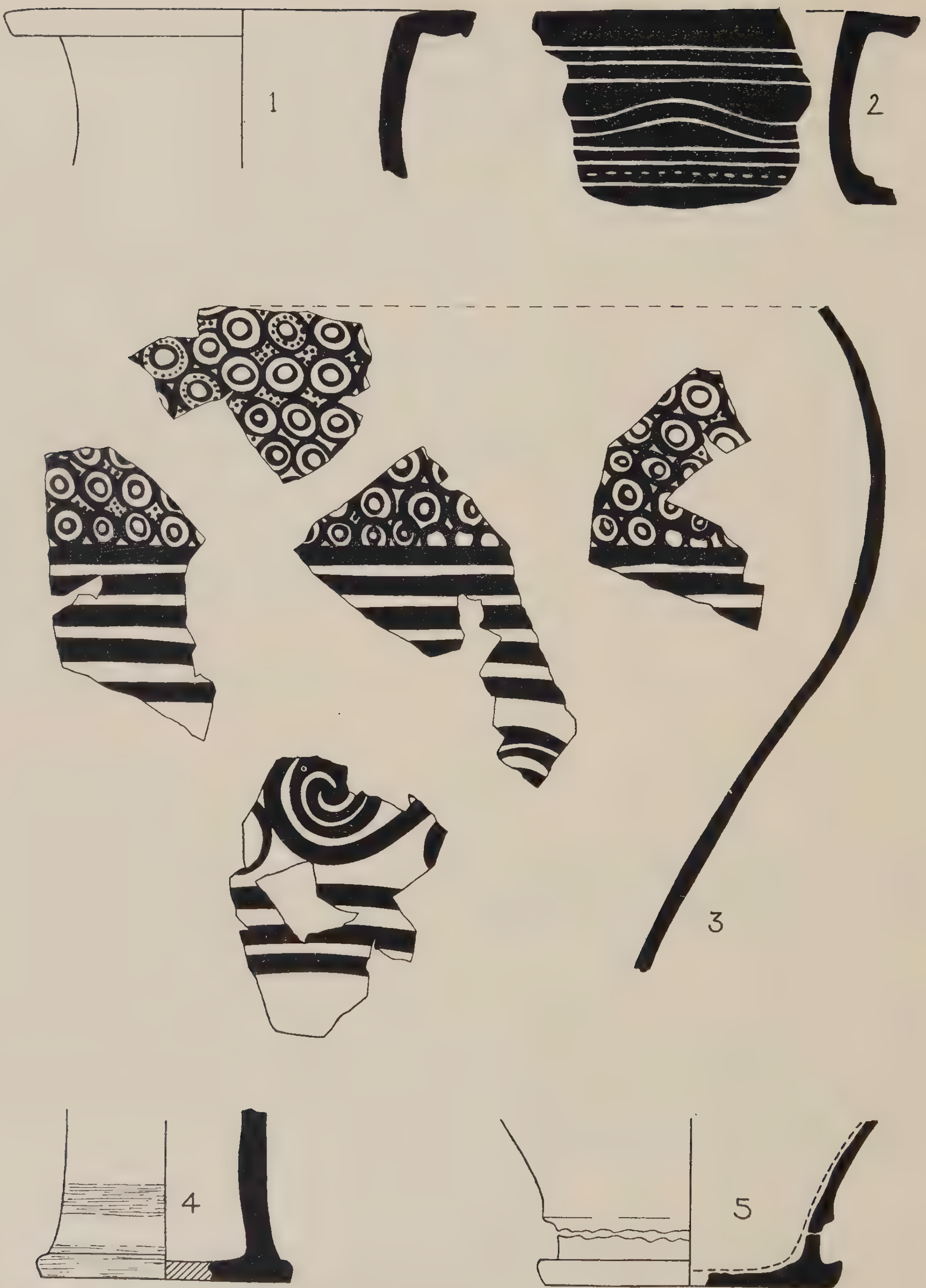

Fig. 43.—Fragments of Palace Style Amphorae.

(1) *No.* 14; (2) *No.* 13; (3) *No.* 2; (4) *No.* 16; (5) *No.* 15; *Nos.* (2), (3) *and* (5) *possibly from same vase.*

Scale 1 : 4.

and the base No. 15 (FIG. 43, 5) may belong to this vase to judge from the fabric. One fragment has the stump of a vertically set handle, and a handle of circular section painted solid black may come from this vase.

The clay is greenish with a tinge of orange, and full of large grit dominantly grey in colour. The fabric is very soft, and most of the inside surface of the fragments has flaked away. The outside surface clearly shows the vertical marks of some broad implement used in smoothing it. The decoration, which is much worn, is in black shading to brown streaky lustrous paint, which has crackled.

The upper part of the body has a version of the 'variegated stone' pattern (*MP* motive 76, 2) separated by five horizontal bands from a bold running spiral below. Similar 'variegated stone' designs, often of an elaborate character with the details picked out in white, occur on L.M. I vases in Crete.[25] On the Mainland this type of design appears to be very rare. Furumark only cites one example, on a Palace Style amphora from Kakovatos Tholos A, which he dates L.H. I (*MP* motive 76, 2; *AM* 1909, pl. XXIV 10). The double circles on this amphora are very similar to those of our vase, but they are spaced at intervals in a field of dots as on the examples from Crete. The unusual concentration of circles on our vase, with the virtual elimination of the field of dots, would appear to reflect an advanced stage in the development of the pattern when all idea of its naturalistic origin had been lost. Bold double spirals of the type displayed by our vase are very characteristic of the more simply decorated wares from M.M. III and L.M. IA deposits at Knossos and elsewhere in Crete, but seem to be rare on the Mainland.[26]

Cf. *MP* motive 46, 32; with a range of L.H. I–IIA according to Furumark: *e.g.* the early jug from Shaft Grave VI, *Schachtgräber*, pl. CLXXV, no. 945.

3. Fragments of a Palace Style amphora (PLATE 25, *b*). Mus. No. 5392. The surviving handle appears to have been set horizontally on the shoulder. The rim No. 14 (FIG. 43, 1) may come from this vase.

The clay is orange-buff, and contains a good deal of grit, rather finer than the grit in No. 2. The fabric however is harder than that of No. 2. The outside surface is buff, smoothed, and decorated in dark brown shading to reddish brown crackly lustrous paint with a network of small spirals interspersed with dots. This creates an effect very similar to that of the 'variegated stone' pattern of No. 2; and the design can be regarded as a variety of such 'variegated stone' pattern influenced by spiral network as found on a number of Palace Style amphorae from the Mainland (*e.g.* Kakovatos Tholos A, *AM* 1909, pl. XVII), Dendra (*New Tombs at Dendra*, fig. 77), Berbati (*ILN* 15. 2. 1936, p. 279, fig. 15).[27]

A very close parallel for the design on our vase, but apparently without dots among the spirals, is provided by an amphora from Prosymna, tomb ii (*Prosymna* 418, no. 178, figs. 434, 685): this tomb goes back to the beginning of L.H. II according to Blegen, who regards this vase as one of the earliest objects from it.

4. Fragments of a Palace Style amphora (PLATE 26, *a*). Mus. No. 5389. The clay is buff, shading to orange at the centre of the break, tempered with abundant grit. The fabric is very soft, and much of the inside surface of the vase has gone. The outside surface is buff, smoothed, and decorated in black to dark brown crackly lustrous paint with a design of double axes. There are traces of detail added to the design in white.

For the design compare *MP* motive 35, esp. 8 on a sherd from the Tomb of Aegisthus (*BSA* XXV, pl. XLVIII *p*), dated by Furumark L.H. I–II; but the spots on our example are much larger. For a similar type of axe, but without spots in the field, compare the little jars from Shaft Grave I (*Schachtgräber*, pl. CLXVII, nos. 190–2); compare also a cup and rhyton from Prosymna (*Prosymna*, figs. 655, 670) and cups from Dendra (*New Tombs at Dendra*, fig. 29, 3, 7), etc.

5. Fragments of a Palace Style amphora (PLATE 27, *a*). Mus. No. 5388. The clay is orange, tempered with a little very fine grit. The fabric is soft, and the inside surface has entirely flaked away; but the vase seems to have been thin walled. The outside surface is buff, well smoothed, with the horizontal marks of the smoothing instrument clearly visible. It is decorated in black lustrous paint with 'sacral ivy' of a type dated by Furumark L.H. I–IIA (*MP* motive 12, *j* and *n*).

The decoration on our vase is closely paralleled on the jug from Shaft Grave I (*Schachtgräber*, pl. CLXIX, no. 199), and on a fine Palace Style amphora from a tholos tomb at Pylos (*AE* 1914, pl. 2, 1 no. 21). Compare sherds from a Palace Style amphora from the Tomb of Aegisthus (*BSA* XXV, pl. XLIX *c*, *e*, *f*).

6. Fragments of a Palace Style amphora (PLATE 26, *b*). Mus. No. 5391. One vertically-set handle of circular section is preserved. The clay is orange shading to deep buff, tempered with fine grit. The walls of the vase are thin. The outside surface has been carefully smoothed, and is decorated in black to brown crackly lustrous paint with 'sacral ivy' pattern in a field of dots.

For the 'sacral ivy' compare *MP* motive 12, *s* and *t*, which Furumark assigns to L.H. IIA.[28] *Cf.* especially two amphorae from Kakovatos Tholos B (*AM* 1909, pl. XIX).

7. Large fragment of a Palace Style amphora (PLATE 27, *b*). Mus. No. 5390. This comes from the shoulder of the vase, and preserves part of the raised ridge round the base of the neck, and the stump of a vertically set handle which seems to have been of the 'metallic' three-ribbed kind. Three such handles were found, and may come from this vase. The clay is pink, tempered with fine grit. The outside surface is greenish-buff, well smoothed, with the horizontal marks of a broad smoothing instrument visible. It is decorated in black crackly lustrous paint with 'sacral ivy' outlined by rows of dots. The neck ridge is defined by a band of paint with a fringe of little loops below it. A spiral hook depends from the broad horizontal band at the bottom.

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[25] *E.g.* Gournia (Gournia, pl. VII 40; VIII 18; IX 1); Palaikastro (*BSA* Suppl. I 36, fig. 24; *BMC Vases* I, A 663, 2); Pseira (Seager, *Pseira* 33, fig. 14). *Cf.* Phylakopi (*JHS* Suppl. 4, pl. XXXI 4). Banti (*Festos* II (1951), fig. 290) makes this design characteristic of East Crete in L.M. I, but it has M.M. III antecedents at Knossos (*MP* 131, citing *PM* I, col. pl. VII.

[26] For Knossos see *PM* II *passim* (esp. *ibid.* 549, fig. 349, from Gypsades well). *Cf.* Mallia (*Et. Crét.* I 53, pl. XXVI 1), Phaistos (*Festos* II 391 ff.). As Banti points out (*ibid.* 501, 528), this type of spiral is rare in East Crete, although it occurs on such typical L.M. I vases as *e.g.* Gournia (*Gournia*, pl. VII 26), Palaikastro (*PM* II 215, fig. 121 *c*), Pseira (Seager, *Pseira* 28, fig. 9, running round the lower part of a large amphora as in our case). There are a number of examples from Phylakopi, *JHS* Suppl. IV, pl. XXV 9; XXIX 1 etc.

[27] In Crete a covering of spirals already appears on the L.M. IA pithoid jar from the North-east House at Knossos (*PM* II 422, fig. 245. Cf. *PM* II 549, fig. 349 *d*, from the Gypsades well). Compare Seager, *Pseira* 28, fig. 9, and for later examples, *PM* IV, fig. 248.

[28] To Furumark's list add *Prosymna*, fig. 106, no. 412, from the floor level in tomb xvii.

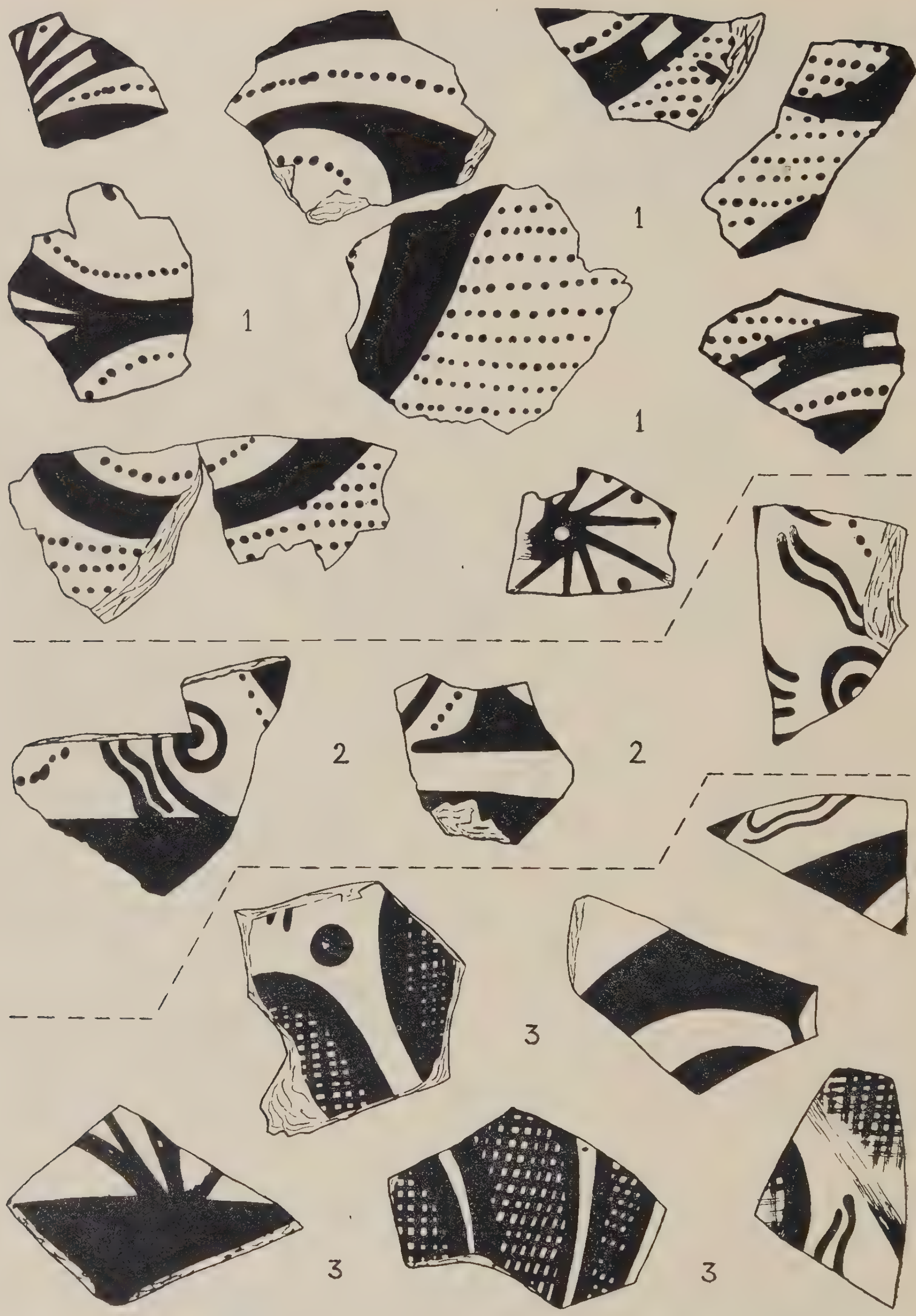

FIG. 44.—FRAGMENTS OF PALACE STYLE AMPHORAE.

(1) *No.* 8; (2) *No.* 7; (3) *No.* 10.

Scale 1 : 4.

The decoration seems to be more careful than on No. 6, and the 'sacral ivy', cf. *MP* motive 12, s (L.H. IIA), closely approaches the examples in metal and stone of L.M. IIIB–L.M. IA discussed by Evans (*PM* II 478 ff.). For the little loops below the neck ridge-band compare a L.H. II jug from Mycenae (*BMC Vases* I, A 785), and a L.H. II sherd from Eleusis (Mylonas, Προϊστ. Ἐλευσίς, fig. 100, 2). Such loops are common enough on M.H. matt painted wares (e.g. *Mycenae*, fig. 105; *Korakou*, fig. 35, 11; 36, 7, etc.), and their presence on Mycenaean vases may represent a survival of M.H. motives (cf. *MP* 337, under motive 42).[29] For spiral hooks growing from the top or bottom border of the design, see e.g. *Schachtgräber*, pl. CLXIX; cf. *AM* 1909, pl. XXIII 1, etc.

The fragments (FIG. 44, 2) of the same fabric with a similar style of decoration may come from this vase.

8. Some fragments of a Palace Style amphora (FIG. 44, 1), mostly from the plunder pit (A on Plan, FIG. 42), and from the floor of the tholos immediately inside the entrance. The clay is orange, with abundant but mostly small grit. The fabric is soft, and the inside surface has entirely gone. The outside surface is carefully smoothed, buff in colour. The decoration in dark brown shading to red lustrous paint seems to comprise a variety of 'sacral ivy' in a field of dots. But the fragments do not appear to belong to the same vase as Nos. 6 or 7.

For the probable type of design see Kakovatos (*AM* 1909, pl. XVIII 2, from Tholos A; pl. XIX 1, from Tholos B). *Cf.* vases from Prosymna (*Prosymna*, fig. 365, from the dromos of tomb xliii) and Thebes (*AE* 1910, 223, pl. 10, 2, from Tomb 2; *A Delt* III 201, fig. 145, from Kolonaki tomb 26).

9. Three fragments of a Palace Style amphora (PLATE 27, *a*). Mus. No. 5387. The clay is pink, tempered with grit. The outside surface is buff, smoothed, and decorated in black lustrous paint with a 'foliate band' design (MP motive 64). There are traces of lines added in white on the black bands.

The 'foliate bands' here approximate to Furumark's earlier type of M.M. origin, cf. *BSA* XXV, pl. XXIII, o, classified by Furumark as early L.H. I. In this naturalistic form (as opposed to the stylised and devolved versions of *MP* motive 64, 3–5, with a range according to Furumark of L.H. I–IIB) the 'foliate band' is rare on the Mainland. It is, however, characteristic of L.M. IA decoration in Crete, where it sometimes appears with a single but usually with a double spray like our examples (*MP* 152): *e.g.* Knossos (*PM* II 422, fig. 245, 'pithoid' jar from the North-east House): cf. *Gournia*, pl. VII 26 etc., rhytons from the Rhyton Hoard.

10. Some fragments, apparently from a Palace Style amphora (FIG. 44, 3). The fabric is very soft, and most of the inside surface has gone. The outside is deep buff, well smoothed, with marks of the smoothing instrument clearly visible on some sherds. The decoration in light to dark reddish brown lustrous paint consists of a 'hatched loop' design (*MP* motive 63).

'Hatched loop' patterns of this type are essentially L.H. I–IIA. See especially a Palace Style amphora from Kakovatos Tholos A (*AM* 1909, pl. XXIII 1: *cf.* pl. XXIV 1, from Tholos C), and a large hole-mouth jar from Prosymna (*Prosymna*, fig. 656, assigned by Blegen to L.H. I): *cf.* others from Mycenae (*Chamber Tombs*, pl. XXXIX, T. 518, 4) and Dendra (*New Tombs at Dendra* 27, fig. 29, 6).

11. Fragments of a closed vase of uncertain shape, perhaps a small three-handled amphora. The vase had a raised rib round the base of the neck; and the stump of a circular-sectioned handle was recovered. The clay is light grey, orange at the surface, which is very much worn, but preserves traces of decoration in red lustrous paint. The design seems to have been some variety of 'hatched loop' as on No. 10.

12. Fragment of rim with handle from a jug or oval-mouthed amphora (PLATE 28, *a*).[30] The vase seems to be wheel-made, and is of heavy fabric with walls 0·015 or more in thickness. The clay is greenish yellow with abundant grit, which appears on the surface, especially on the inside. The outside surface is well smoothed or burnished. The decoration in black lustrous paint, now much worn, consists of a bold running spiral, with stripes down the handle and round the base of the neck, and round the inside and outside of the rim.

There were fragments of four other jugs or small handled jars, which might have formed part of the original tomb furniture. All seem to have been wheel-made, of coarse gritty orange clay, decorated in slightly lustrous paint with plain bands round the neck and rim.

13. Rim of a Palace Style amphora (FIG. 43, 2), which may belong with No. 2, which it resembles in fabric. It has an all-over coat of black lustrous paint, with decoration added in white as shown. There are traces of white decoration, perhaps thin wavy bands, along the top of the rim.

14. Rim of a Palace Style amphora (FIG. 43, 1), which may belong with No. 3, which it resembles in fabric. It is covered all over inside and outside with brown shading to reddish brown lustrous paint.

15. Base of a Palace Style amphora (FIG. 43, 5), reconstructed from two fragments which do not join. This may possibly come from the same vase as No. 2. The clay is orange, buff on the outside surface, and full of large grit dominantly grey in colour. The inside surface has entirely vanished. The outside appears to have been painted black all over.

16. Base of a Palace Style amphora, or perhaps of a vase like No. 12 (FIG. 43, 4). The clay is light green, full of grit. The decoration consists of broad horizontal bands in black to dark brown lustrous paint which is much worn.

17. Strainer spout (FIG. 45, 13), roughly made of greenish clay, with the outside surface burnished. Another similar but smaller is of orange clay. Both came from the fill of the tholos, and are M.H.

For such strainer spouts compare Schliemann, *Tiryns* (1886), 119, no. 30 (brought to my notice by Mr. Alan Hunter), which may be M.H. They are found on some L.H. III vases. For examples from Anatolia, e.g. *Alaca Höyük Hafriyatı* (*Türk Tarih Kurumu*, series V, no. 1 1937), plate XXIX 75, XXXIX 181.

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[29] But such loops are also found in Crete, *e.g.* the little amphora from Phaistos dating from the Second Palace at the latest (*Festos* II 65, fig. 29). Compare the one-handled jug from the Maket tomb at Kahun in Egypt (*PM* II 2, figs. 291 *f*, 315 *d*) classified by Evans as L.M. IB, but which is more likely to be a product of the Mainland (Kantor, *The Aegean and the Orient in the Second Millennium* (1947), 35; *Klio* XXXII (1939–40), 146 E 1).

[30] See the two oval-mouthed amphorae with similar bold spiral decoration round the upper part of the body from Kakovatos Tholos B (*AM* 1909, XXIV 8, 9). *Cf.* another from Mycenae, T. 518 (*Chamber Tombs*, pl. XLII 5). This type of vase appears to be rare on the Mainland, and is evidently derived from Crete, where it is common from M.M. II onwards (*MP* 19, note 4). There are many examples from M.M. III–L.M. IA deposits at Knossos; although most of these are larger and fatter than the three from the Mainland cited above. For tall, slender amphorae resembling those from the Mainland, see *PM* II 436, fig. 253 A, from the House of the Frescoes (M.M. IIIB–L.M. IA), which affords a very close parallel to that from Mycenae T. 518.

B. *Miscellaneous Objects* (*Mycenaean or later*)

18. Leaf of gold (FIG. 45, 1). L. 0·035 m. W. 0·024 m. Found with the amber bead No. 24 in a pocket of earth filling a hollow on the under side of one of the fallen jamb stones (see p. 71). The leaf is made of thin gold. The veins are scratched on one side, so that they appear in relief on the other.

19. Gold sequins (FIG. 45, 2), about nine in all, mostly from the floor of the tholos. Some are circular, and some have tails. Most have a single pin-hole perforation for sewing them to some fabric.

20. Fragments of gold leaf (FIG. 45, 3–6), about a cigarette box full, mostly from the plunder pits and the floor of the tholos. No. 3 is part of a strip. No. 4 has the upper edge scalloped. No. 6 was apparently folded over the edge of some fabric, to judge from the pin-hole perforations at the fold.

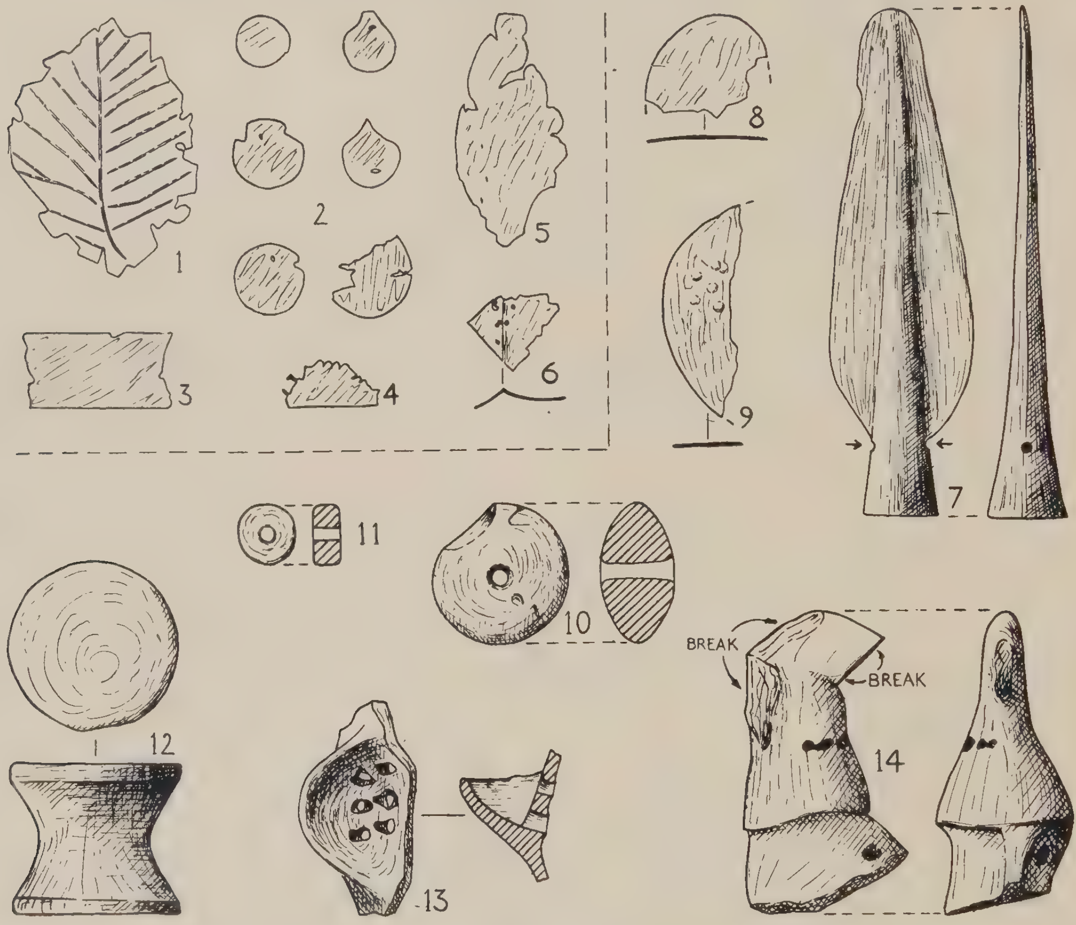

FIG. 45.

(1–6) *Gold, Nos.* 18–20; (7–9) *Bronze, Nos.* 21 *and* 22; (10) *Amber bead, No.* 24; (11) *Paste bead, No.* 25; (12) *Clay spool, No.* 28; (13) *Strainer spout, No.* 17; (14) *Terracotta head, No.* 30.

Scale, Nos. (1–6), (11) *and* (14), *full size*; *rest* 1 : 2.

21. Bronze javelin head (FIGS. 45, 7, and 46), from the floor of the tholos under a fallen jamb stone (see p. 72). Mus. No. 5576, L.O. 13 m. W. of blade 0·035 m. Two rivet holes (D. 0·002 m.) at the base of the blade. The weapon is remarkable both for its small size and the shape with rounded tip and short socket. Moreover, there is no sign of the slit usually present in the sockets of Bronze Age spear and javelin heads from the Aegean.[31] A small javelin head (only 0·095 m.

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[31] *E.g.* the splendid series of L.M. II weapons from Knossos (*BSA* XLVII 261 ff.). Note especially the spear head II (4) where the slit, which runs diagonally instead of straight up the socket, is so fine as to be hardly visible. According to Montelius (*La Grèce Préclassique* I 156, fig. 482), one of the spear heads from the Acropolis Hoard at Athens has no slit.

long), found with M.M. III pottery of the last phase of Palace I at Phaistos (Pernier, *Festos* I 364–6, fig. 218), shows a rounded tip, and to judge from the photograph might have rivet holes at the base of the blade; but the socket is larger than in our example. For a short socket like ours compare a bronze head from the proto-geometric level at the Amyklaion (*AM*, 1927, 34, fig. 17, 1: size not given). From the place of its finding, however, our javelin head is likely to belong to the original furniture of the tomb.[32]

22. Two fragments of thin bronze plate (FIG. 45, 8, 9), from the floor of the tholos. L. 0·035, 0·055 m. Part of the original curving edge is preserved in each case.

23. Five scraps of thin lead plate, from the floor of the entrance (see p. 71). The largest 0·025 × 0·008 m.[33] These may possibly be fragments of lead figurines, *cf.* Dawkins, *Artemis Orthia* (*JHS* Suppl. V (1929), Ch. IX). Some (unpublished) were found at the Argive Heraion (*ibid.* 250), and one by Mrs. Schliemann when excavating the Tomb of Clytemnestra (*BSA* XXV 364).

24. Amber bead (FIG. 45, 10). Mus. No. 5577. D. 0·038 m. Found with No. 18 in a pocket of earth filling a hollow on the under side of one of the fallen jamb stones (see p. 72). For the Baltic amber trade see the thorough survey by Clark, *Prehistoric Europe* (1952), 261 ff., with references for finds of amber from the Aegean. The amber was, normally at any rate, imported in the form of beads or complete necklaces (e.g. *AM* 1909, 278, pl. XV 10–25, from Kakovatos Tholos A with ' spacer beads ' of a type found in South German tumuli). But that it might also be worked by Mycenaean craftsmen is shown by an amygdaloid engraved gem of amber from Mycenae (*Chamber Tombs* 86 fig. 33, and p. 197 with reference to another from Laconia).

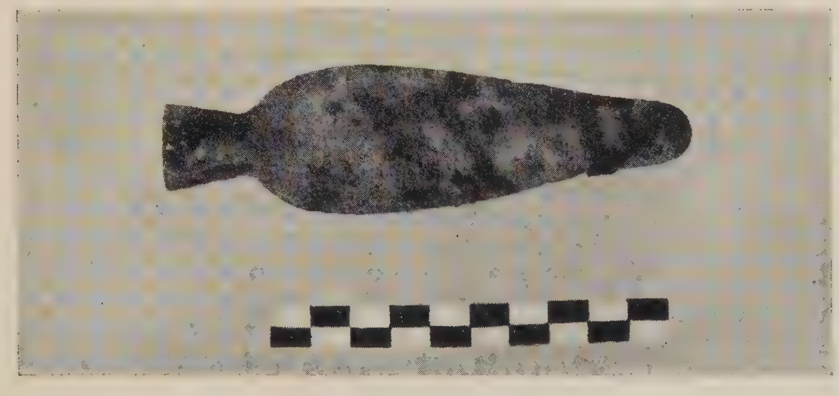

FIG. 46.—BRONZE JAVELIN HEAD, NO. 21.

25. Bead (FIG. 45, 11), from the floor of the tholos. D. 0·008 m. Thick 0·003 m. Made of white (originally perhaps blue or green) paste.

26. Fragment of worked boar's tusk, from the floor of the tholos. L. 0·037 m. W. 0·016 m. Cut off straight at each end. The tusk is damaged, and there is no sign of perforations on the part preserved for sewing it to a backing; but it may come from a boar's tusk helmet, cf. *Chamber Tombs* 212 ff.

27. Disc cut from a thick potsherd of coarse, gritty red-brown clay, with the outside surface smoothed or burnished. D. 0·05 m. From the fill of the tholos. Another smaller (D. 0·03 m.) of buff clay, with two bands in light brown lustrous paint, from the floor of the entrance. Both probably L.H. III. For the possible purpose of such discs see p. 17, PLATE 11, *d*.

28. Spool (FIG. 45, 12), from the fill of the tholos. Mus. No. 5578. L. 0·04 m. D. 0·045 m. Greenish-white clay with the surface well smoothed. Probably L.H. Another was found in clearing the doorway of the tholos in 1922 (*BSA* XXV 296). These objects are presumably reels for winding thread. They occur from E.H. through M.H. and Mycenaean times and later (*e.g.* Blegen, *Zygouries* 190; *Asine* 310, fig. 213, 7; *Phylakopi* 213, pl. XL 36; *BCH*, 1906, 36, fig. 61, from Argos; Payne, *Perachora* I 248, pl. III, no. 268, dating from late sixth century B.C.).

29. Three fragments of female terracotta figurines, from the floor of the tholos (1, 3), and from the fill (2). Mus. Nos. 5572–4. Buff clay with decoration in brown lustrous paint. (1) Head wearing polos. H. 0·02 m. Paint down the nose and all round the outside of the crown. (2) Bare head and shoulders. H. 0·025 m. Necklace of dots in front of the neck. Back of the neck and top of the head painted solid. Striped wavy garment back and front. (3) Bust, with prominent breasts (one missing). H. as preserved 0·04 m. Striped wavy garment back and front. Nos. 2 and 3 probably come from figurines of Furumark's type φ (*Chronology of Mycenaean Pottery* 86 ff.).

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[32] For rivet holes at the base of the blade see a spear head from Olympia (*Olympia* IV, pl. LXIV, no. 1034). This is rather larger than our javelin owing to the length of the socket, which in the drawing at least shows no sign of a slit. The rounded tip in the drawing may be the effect of corrosion (but cf. *ibid.* no. 1035). For the rounded tip of the blade compare a spear head from Ialyssos (*Annuario* XIII–XIV 344, fig. 95). Rounded tips are found on some Bronze Age spear heads from Egypt and the Near East (*e.g.* Petrie, *Tools and Weapons*, pl. XXXVII 57).

[33] These do not seem to me to have any resemblance to the Spartan lead figurines. A. J. B. W.

30. Terracotta head of a warrior wearing a tall conical helmet with crest (FIG. 45, 14, PLATE 27, *c*). Mus. No. 5575. Found on the floor of the entrance (see p. 71). Broken, with the lower part of the face and the crest missing. H. 0·04 m. The clay is orange, and the surface preserves traces of a thick white wash. There are indications of an original decoration in black lustrous paint—remains of dots for the eyes, and of a band round the helmet. In clay the only good parallel seems to be a Late Geometric head from the Amyklaion, although this is rather larger than our head (*AE* 1892, 13, plate 4, 4: discussed by Buschor, *AM* 1927, 15, and Kunze, *AM* 1930, 155). But there are a number of early bronze statuettes from Olympia and elsewhere with high conical helmets (listed by Kukahn, *Der Griechische Helm* 11 ff.: Der Kegelhelm).[34] The crest of our helmet is broken off at back and front. It may therefore have been a fore-and-aft crest of the type worn by the bronze statuette, *Olympia* IV, pl. XVI 243; or else of the asymmetrical type as worn by another bronze from Olympia (*AM* 1906, 219, pl. XVIII). For both types of crest *cf.* the Tiryns shields, assigned like the Amyklaion head to the final phase of the Geometric period (Lorimer, *Homer and the Monuments* 234, pls. IX and X).

M. S. F. H.

II. *Post-Mycenaean Pottery*

A. *Geometric*

Jugs.

Fragment of shoulder (PLATE 28, *c*, 14). Fine pinkish buff ware, black glaze; in panels, parallel zigzags and long-tailed standing bird. Uncertain fabric.

Two fragments of neck (PLATE 28, *d*, 2). Fine pale ware, black glaze; vertical key meander in panel. Uncertain fabric.

Inconsiderable scraps of other forms.

Kraters or Bowls.

Fragments from large and medium-sized vases, of types as *Tiryns* I 146 f., figs. 10–13. Buff ware, glaze generally dull brown; the interior normally glazed. There are two fragments from high bases of kraters with linear decoration, one of them showing the trace of a triangular fenestration. There are also two or three fragments each from vertical handle-straps and from arched tubular handles, but there is no certainty that the two forms were associated to form stirrup-handles. There are half a dozen fragments of upright collars, generally decorated with a lozenge-chain (*e.g.* PLATE 28, *c*, 1) or bent-line ornament (*e.g.* PLATE 28, *c*, 2). Some twenty fragments of bodies show decoration consisting of lozenges, upright zigzag meander (*e.g.* PLATE 28, *c*, 3–4) and simple bent-line ornament (*e.g.* PLATE 28, *c*, 5) arranged in xones; these seem in the main to be Late Geometric. One fragment with a low lip decorated with stripes seems to have concentric circles on the shoulder (PLATE 28, *c*, 6). In addition, two fragments from the belly of large open vases show more elaborate Geometric decoration, and are probably earlier than the common run of Late Geometric (PLATE 28, *c*, 7–8).

Plate.

Fragment of a large platter or shallow bowl (PLATE 28, *d*, 1). Buff clay, dark brown glaze. Diameter of foot-ring *c.* 0·16 m. On the interior broad rings of glaze.

Skyphoi and Kantharoi.

About a dozen rim fragments seem to come from cups with an upright lip decorated with stripes and linear ornament (PLATE 28, *c*, 9–12); two fragments (one shown PLATE 28, *c*, 13) are from cups with a scarcely modulated rim resembling the earliest Protocorinthian kotyle form. The interior of the lip bears glaze stripes. The bellies of these cups seem to have been striped or completely glazed, and the feet were simple flat bases. Half a dozen horizontal handles and two or three vertical strap-handles seem to belong to such cups.

B. *Corinthian*

Jugs.

Fragment from neck junction of striped vase (PLATE 28, *d*, 3). Buff ware, glossy brown glaze, resembling ware of about the turn from Corinthian Geometric to Protocorinthian.

Several fragments of neck and body (PLATE 28, *d*, 4); form as Johansen, *VS*, pl. 7, 1–2. Buff ware, red glaze. Diameter of foot *c.* 0·09 m.

Two fragments from neck and shoulder of similar vase. Pale ware, faded brown glaze.

Kotylai.

Fragment of lower part. Pale clay, red glaze. Diameter of foot *c.* 0·055 m. Broad-bottomed rays above foot. Seventh century.

Scrap from lip zone with linear decoration and stripes below. Buff clay, reddish glaze. Seventh century, not late.

Two scraps from upper part of vases with purple and white stripes on glazed body (PLATE 28, *d*, 5). Buff clay, glaze black and red. Cf. *Corinth* VII, 1, 59, no. 211.

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[34] I am much indebted to Mr. R. Higgins and to Mr. R. V. Nicholls for referring me to the Amyklaion head and the bronze statuettes, and to Mr. R. V. Nicholls for providing photographs of the head.

Scrap of lower wall with low band of thin rays above foot. Pale greenish clay, faded brown glaze. *Cf.* Payne, *NC* 324, on no. 1341. Probably sixth century.

A few fragments of Corinthian ware from unidentified shapes.

C. *Argive Archaic Wares*

Kraters.

Fragments from rims of two vases with glazed body and linear decoration in glaze on rim; one of the form above, p. 42, Agamemnoneion B 1, the other probably of a form similar to *loc. cit.* B 2. Buff clay, poor dark glaze. Probably seventh-century.

Kantharoi.

Two fragments of a glazed vase. Fine buff ware, streaky dark brown glaze. Cf. above, p. 42, B 4–6.

Handle junction from larger vase of same form with crisscross glaze decoration on top of handle strap. Buff clay, red glaze.

Miscellaneous.

Fragment from lower wall of pyxis (?) (PLATE 28, *d*, 6), apparently flat-bottomed. Fine buff ware, brown glaze; glazed inside.

Rotelle-lug from miniature vase, probably a phiale as *Tiryns* I 99 fig. 32 right. Fine hard buff ware, traces of red paint on white slip.

Inconsiderable fragments of other archaic glazed vases.

D. *Post-archaic Wares*

Classical.

Fragments of black-glazed vases, including a fifth-century kylix rim and two pieces from the lower body of kotylae of the fourth century Argive form (*cf.* above, p. 59, G 7).

Hellenistic.

Fragment of shoulder of broad-necked amphora with West Slope decoration (PLATE 28, *d*, 7). Buff clay, black glaze; vertical strokes and chequer in thinned clay, white paint on alternate squares of chequer; glazed inside. Cf. *Hesperia* III 374, figs. 59–60.

J. M. C.

4. CONSTRUCTION AND HISTORY

Generally speaking the construction of this tomb is simple and rudimentary. The dromos and the tomb itself are cut out of the soft rock of the hillside (FIG. 42). The dromos is cut as an open gallery running horizontally almost due north into the ridge. Owing to the excavations and other disturbance, it is not now possible to be sure of the original length of the dromos. At present as excavated it is twelve metres long, but it seems likely that it was originally not more than six or seven metres long and that the extra length is due to the excavations. It is four to five metres wide. This proportion of width to length agrees with that observable in the earlier chamber tombs.[35] The dromos is cut directly out of the soft rock and is not lined with any kind of masonry.

At the façade the dromos is five metres wide, and the façade (PLATE 24, *a*), which stands to a height of four and a half metres, is built of fairly large blocks of conglomerate and limestone all undressed and packed together in a rather rough manner. The blocks at the angles and along the sides of the doorway are considerably larger on the average than the stones with which the tholos itself is built up. The doorway is five metres deep and two metres wide. It is wider at the bottom than at the top, and naturally the largest stones are those at the jambs. It is roofed with five slabs of conglomerate. Of these the second and third from the front overlap the side walls by little. The largest lintel is the innermost, and next in size comes the front lintel. As already noted, there are two shallow cuttings of unknown purpose on the top of the outermost lintel. They may have some connection with the superstructure. The third block from the front has been turned on its edge, and the second block has been shifted slightly. As already remarked, this was probably done by treasure seekers and while the blocking wall across the doorway level with the front of the façade was still intact. It is presumed from the evidence of the Cyclopean tomb, the Tomb of Clytemnestra, the Argive Heraion tholos,[36] and tholos B at Thorikos[37] that the tholos tombs all had blocking walls in their doorways, even when they had doors, just as every chamber tomb had its doorway built up with a blocking wall.[38] This would mean that if after a burial had taken place within the tholos it was desired to make another interment within it the dromos would have had to be dug out and the blocking wall taken down. Since it is presumed that the tholos tombs as a rule were intended for only one burial, and that a royal one, this would rarely, if ever, occur. In the doorway here there is no sign of there ever having been a threshold, and there are no pivot holes for a door. The side walls also show no sign of a door-frame. Since as already noted the lintel slabs do not grip far over the upper edges of the walls of the doorway as in the Tomb of Aegisthus we can assume that there was no relieving triangle.

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[35] Wace, *Chamber Tombs at Mycenae* 124 f.

The circle of the tholos still stands to a height of about five metres, but it is in a very unsafe condition and, as stated, the north-west jamb of the doorway has collapsed (PLATE 24, *b*). In doing so it brought down the adjoining part of the wall of the doorway and of the tholos. The tholos is built of small slabs and pieces of limestone packed together with clay and counter-weighted and wedged so as to sustain the inward slope of the vault (PLATE 24, *b*). The tholos masonry is probably about one and a half metres thick at the base, and naturally widens with the upward and inward curve of the vault. At its present height it is probably about two metres thick, but accurate measurement is difficult owing to the ruinous condition of the whole. The tholos was about eleven metres in diameter and probably about ten metres high. It was floored with small pebbles packed tightly together like the floor of the tholos tomb at the Argive Heraion.[39] It was usual to floor tholos tombs. The Kato Phournos Tomb, the Lion Tomb, and the Tomb of Genii were floored with cement.[40] Tholos B at Kakovatos was paved with large slabs.[41] The tomb at Dendra had a thin plaster floor.[42] There are no grave pits in the floor, and the hollows now visible in the rock floor where the pebble paving has been destroyed are obviously the work of tomb robbers and treasure seekers. It can be seen from the plan that owing to the dangerous state of the masonry it was not possible to clear the floor of the tholos right up to the wall. A grave pit may therefore lie under the remaining débris, but it is hardly likely, although Tholos C at Kakovatos had a shaft close by the wall of the tomb.[43] Of the other tholoi at Mycenae the Cyclopean Tomb, the Panagia tomb, and so far as known the Tomb of Aegisthus had no grave pits, though the latter had apparently had a pit in the doorway like the Vaphio Tomb.[44] The Treasury of Atreus and the Tomb at Orchomenos had no grave pits in the tholos but had side chambers.

This tholos when complete must have projected a good height above the level of the top of the ridge, and with a mound of earth piled over it in the usual fashion would have been a conspicuous feature, and would inevitably have attracted the attention of plunderers. If the earth weight was removed from the part of the tholos projecting above the level of the ridge the rubble masonry would have been weakened and exposed to the disintegrating action of weather and so been led to collapse.

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[36] *BSA* XXV 289, 330, 361; Wace, *Mycenae* 37, 43, pl. 53a, 63a.

[37] *AE* 1895, 224.

[38] Wace, *Chamber Tombs at Mycenae*, 132 f.

[39] *BSA* XXV 333.

[40] *Ibid.*, 322, 325, 378.

[41] *AM* 1908, 307 ff.

[42] Persson, *Royal Tombs at Dendra* 23.

[43] *AM* 1908, 311, fig. 5.

[44] *AE* 1889, 139 ff.

It will be seen that in its construction this tholos much resembles the Cyclopean Tomb.[45] Like that tholos, it has no lining to the sides of the dromos, the lintels of the doorway are short, the jambs of the doorway are built with comparatively small stones, and the tholos is built up with packed rubble masonry. In these points it, like the Cyclopean Tomb, antedates the Tomb of Aegisthus.[46] Like the Tomb of Aegisthus, it probably had no relieving triangle. It thus belongs to the first group of tholos tombs [47] at Mycenae from its architecture, and so should be dated not much later than about the first half of the L.H. II period. In other words, it should be placed in the first half of the fifteenth century B.C. This dating is borne out by the pottery found in the tomb. Since the tomb has been well looted, it is hard to decide which of the finds from it belong to the original contents of the tomb. Most noticeable among the fragments of pottery are the pieces of large Palace Style amphorae of good early L.H. II style. In addition to the one from the doorway (No. 1, PLATE 28, *b*) there were fragments of six or eight others from the tholos (Nos. 2–10, PLATES 25–27). Palace Style amphorae are a characteristic of tholos tombs. We have examples from Vaphio,[48] Thorikos,[49] Kakovatos,[50] Mycenae,[51] and so it is not unreasonable to assume that such vases were part of the regular furniture of L.H. II tholos tombs. If this is correct, then the Palace Style vases from this tholos provide a date for it. Since the Palace Style amphorae from it belong to the earlier stage of L.H. II, we see they thus confirm the date for the tomb arrived at from a study of its construction.

The presence of L.H. III pottery in the débris and close to the floor suggests that the tomb might have been already broken into in that period. Plundering might well have taken place towards the end of L.H. IIIB, the period about the time when the large private houses outside the citadel walls, like the House of the Oil Merchant, The House of the Wine Merchant and Petsas' House, were looted and destroyed. How soon after that the tholos collapsed we cannot tell. The presence of Geometric and later pottery in the upper part of the débris within the ruined tholos suggests that it had already collapsed before the Geometric Period began. The later pottery found in the débris does not suggest a cult, but is rather to be regarded as miscellaneous rubbish thrown into the hollow made by the collapsed tholos which would have been a natural and convenient dumping place.

A. J. B. W.

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[45] *BSA* XXV 287 ff.; Wace, *Mycenae* 42 f.

[46] *BSA* XXV 296 ff.; Wace, *Mycenae* 38 f.

[47] Wace, *Mycenae* 16.

[48] *JHS* 1904, 317 f., pl. XI; *SMC* 236, no. 551.

[49] *AE* 1895, pl. 11.

[50] *AM* 1909, 269 ff., pls. XVI–XXIII.

[51] *E.g.* the Tomb of Aegisthus, *BSA* XXV 309, 314, pls. XLIX–LI.

PART V. A MYCENAEAN CAVALRYMAN

> Et prius est armatum in equi conscendere costas
> Et moderarier hunc frenis dextraque vigere
> Quam biiugo curru belli temptare pericla.
>
> LUCRETIUS V 1297–9.

TERRACOTTA figurine (FIGS. 47 and 48). Ht. 0·09 m. L. preserved 0·08 m. Broken in four pieces and much damaged. Fine orange clay, the surface smoothed or burnished. Decoration in red lustrous paint, much worn.

The figurine seems to represent an armed man riding astride upon an animal. The animal and its rider were moulded separately and were put together while the clay was still soft before firing. The rider's legs are not represented. He is wearing a conical helmet,[1] and in his right hand he is clasping what appears to be the hilt of a sword or dagger slung in front of him: but the object might be intended for a bow or quiver.[2] The left hand of the rider and the top of his sword are missing: so is the head of the animal and three of its legs, and there are chips from the remaining leg and from the tail. The animal, from its size in relation to the man and on grounds of general probabilities, may be assumed to be a horse.

The horse has a stripe down its back and vertical zebra-like stripes along the sides which continue down the legs and round the neck. The rider's helmet is painted solid, and his eyes are represented by dots. There is a single broad stripe down his back; but any decoration which there may have been in front, on his chest and on the sword, has left no trace.

This unusual figurine was found, together with many other fragments of Mycenaean figurines of known types and a vast quantity of finely decorated L.H. III pottery, in a deposit against the outside of a piece of curved walling immediately west of the Perseia Fountain House and south of the modern road (see p. 2, FIG. 1). The curved walling seems to define the east edge of the mound that covered the dome of the tholos tomb of Clytemnestra: and the deposit may be votive, reflecting some kind of cult at the tholos in late Mycenaean times, to judge from the heavy concentration of figurine fragments and pottery, and from the character of the pottery, for the most part finely decorated stirrup vases and cups.

Pottery and figurines were in a very shattered condition—our Horseman for example was pieced together from four scattered fragments—since the deposit was only just below the

Abbreviations in addition to those ordinarily used in the *Annual*:

AfO	*Archiv für Orientforschung.*
Chamber Tombs	Wace, *Chamber Tombs at Mycenae* (*Archaeologia* 82), 1932.
MP	*Furumark, The Mycenaean Pottery*, 1941.
Prosymna	Blegen, *Prosymna*, 1937.
Waggons and Carts	Childe, 'The First Waggons and Carts—from the Tigris to the Severn', in *Proc. Prehistoric Soc.* No. 8 (1951), 177 ff.

I am most deeply grateful to Professor Wace for his kindness in allowing me to publish this figurine, and for bringing the above quotation from Lucretius to my notice. To Mr. R. D. Barnett I am extremely indebted for much valuable help, including the note on the Nuzi tablet (p. 87 note 18). I am much obliged to Professor Childe and Professor Wade-Gery for references; to Dr. B. Buchanan for his kind assistance in connection with Oriental seals; and to Mr. P. Corbett and Mr. R. Higgins for the trouble they have taken to advise me with regard to later Greek representations of horsemen.

[1] The conical shape of helmet is characteristically Mycenaean. *Cf.* Lorimer, *Homer and the Monuments* (1950), 225.

[2] In the Near East at this time to judge from the scenes of battle on Egyptian monuments the bow is the principal weapon of chariotry and (so far as the evidence goes) of cavalry also (see p. 91). But a L.H. III sherd from Minet el Beida (Ras Shamra) has a picture of a mounted warrior wearing a sword (p. 88 and note 27). For the carrying of a dagger slung across the waist in front, *cf.* figurines from the Middle Minoan sanctuary on the hill of Petsopha above Palaikastro (*PM* I, fig. 111).

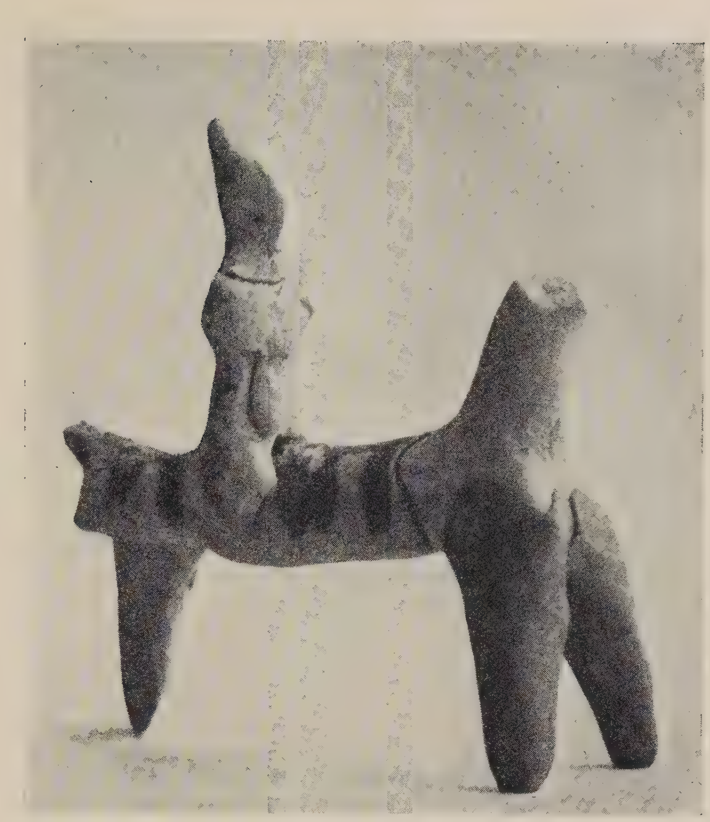

Fig. 47.—Mycenae. Terracotta Horseman (Front Legs of Horse Restored).

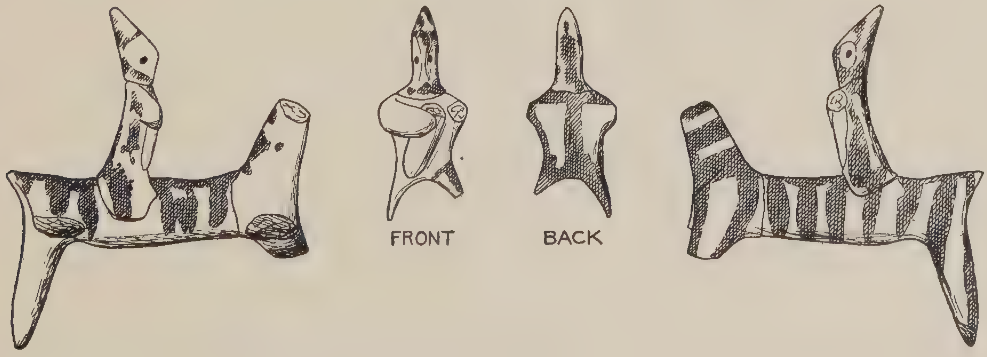

Fig. 48.—Mycenae: Terracotta Horseman.

Scale 1 : 2.

present surface of the ground and had been considerably disturbed by cultivation. The deposit is not therefore in the strictest sense 'closed'. But from this whole area north and west of the Perseia Fountain House hardly a scrap of pottery later than Mycenaean was recovered, while the mass of the pottery from the deposit by the curved wall was decorated in the style of L.H. IIIB, and there was little from it that could be attributed even to L.H. IIIC. It is therefore reasonable to date our Horseman within the limits of the L.H. IIIB period, about 1300 B.C. or not much later.

Our Horseman is one of those rare types of Mycenaean figurines which appear to foreshadow in a remarkable way certain groups of later Greek terracottas. Thus a Mycenaean bread maker is published by Blegen:[3] and several Mycenaean chariot groups have been recorded;[4] there were in fact pieces from such chariot groups among the figurine fragments in the deposit with the Horseman. More interesting for comparison with our Horseman might be two recently published terracottas alleged to come from a tomb at Spata in Attica, and now in the collection of Madame Stathatou at Athens. They represent, the first a (?) goddess wearing a polos crown and sitting side-saddle on what seems meant for a horse, and the second a man riding upon a horse astride.[5] But this horseman is entirely different in type from our figurine—the rider's legs are modelled, and he wears a flat-topped cap: he does not appear to be intended for a warrior. What seems, however, to be a rider exactly like ours, wearing a conical helmet but divorced from his mount, was found in trial trenching on the Kephalari Hill at Prosymna: and Professor Blegen kindly allows me to say that he can remember seeing fragments from various sites that may have come from such horseman terracottas.[6] A fragment of a Mycenaean terracotta which may have belonged to a horseman is reported from Eutresis.[7]

Our Horseman and the rider from Prosymna represent armed warriors, and therefore strongly emphasise the possibility that already during Mycenaean times in the Aegean the horse was being ridden for war.[8] It is an undeniable fact that the mobile strength of Near Eastern armies during the Late Bronze Age resided in their chariots.[9] But representations on Egyptian monuments show that, by the thirteenth century at any rate, horses were being ridden in war to some extent. Riding warriors are occasionally seen, for the most part on the Syrian and Hittite side, in a number of the great battle reliefs of the XIXth Dynasty. These riders are armed like the chariotry with bows and quivers, or in a few cases with shields and presumably javelins.

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[3] *Annuario* N. S. VIII–X (1946–8), 13 ff.

[4] E.g. *Prosymna* 365, fig. 617, no. 415; fig. 618, no. 416, both from Tomb xxii. *Chamber Tombs* 216, pl. xxiv a. Von Mercklin, *Der Rennwagen in Griechenland* (1909), 13 and pl. I 9, for examples from Mycenae, Nauplia, Vari, Ialysos, Enkomi, and elsewhere in Cyprus. *Cf.* Schaeffer, *Ugaritica* II (1949), fig. 97, 13 and 14, for fragments of such Mycenaean chariot-groups from Ras Shamra.

[5] Levi, 'La Dea Micenea a Cavallo', in *Studies Presented to D. M. Robinson* I (1951), 108 ff., pl. 4. In connection with the first of these figurines Levi cites a sealing from H. Triada with a Minoan goddess riding side-saddle upon an animal, which on grounds of the long thin body he compares with the dragon of Mesopotamian representations on which gods sometimes stand or sit enthroned (cf. *AJA* XLIX (1945), 270 ff.). But the animal on this and some comparable Minoan sealings is perhaps more likely to be a horse. The long, thin body, for instance, is very reminiscent of the thin-bodied animals with long necks which are evidently intended for horses in some early Anatolian representations (e.g. *Syria* XII (1931), 48, pl. xx: rein-ring from (?) Boghaz Köy in the Louvre. Delaporte, *Cat. des Cyl. Or. Mus. du Louvre*, A. 904, pl. 96, 1: Syro-Cappadocian seal with a rider). The Minoan goddess on a horse then becomes comparable with the Syrian Anat or Astarte riding upon a horse in contemporary Egyptian pictures (*e.g.* Bossert, *Altsyrien* (1951), 272, no. 931. *Cf.* Müller, *Asien und Europa* (1893), 316). The extraordinary creature ridden by a female figure on a cylinder seal alleged to come from a L.M. III tomb at H. Pelagia in Crete in the published drawing looks neither like a horse nor like any other known animal real or imagined (*PM* IV 497, fig. 436). For later Greek terracottas with a goddess sitting side-saddle, *cf.* Jenkins in *Perachora* I 228, no. 165, with references; *Argive Heraeum* II 40, no. 243; *BSA* XIV 57, fig. 2 a–c.

[6] *Prosymna*, fig. 615, no. 760.

[7] Goldman, *Eutresis* (1931), 198, no. 13.

[8] It has usually been assumed that the art of riding was more or less unknown in Greece before the Iron Age (e.g. *PM* IV 830); and even quite recently far-reaching theories have been based upon that belief, *e.g.* Schachermeyr, *Poseidon und die Enstehung des griechischen Götterglaubens* (1950).

[9] For chariots see Childe, 'The First Waggons and Carts' in *Proc. Prehistoric Society* No. 8 (1951), 177 ff., Schachermeyr, 'Streitwagen und Streitwagenbild' in *Anthropos* XLVI (1951), 705 ff., with very full references, Salonen, *Die Landfahrzeuge des alten Mesopotamien* (Helsinki, 1951) for early Mesopotamian chariots with many illustrations. The whole question of driving and riding is treated at length by Wiesner, 'Fahren und Reiten' in *Der Alte Orient* XXXVIII (1939), 15 ff.

A mounted warrior carrying a rectangular shield flees transfixed by an arrow from Pharaoh's bow in a relief of Seti I storming the town of Jenoam in Syria (*c.* 1300 B.C.), carved on the north outer wall of the great Hall of the Columns at Karnak.[10] Another Karnak relief of Seti I in battle against the Hittites shows mounted Hittites with quivers slung over their shoulders and wearing plumed helmets fleeing before him.[11] A relief of the campaign of Ramses II in Syria during his first year (*c.* 1290 B.C.), on the south outer wall of the Hall of the Columns at Karnak, depicts a Syrian in a long robe riding side-saddle in flight before his chariot: no chariots are represented here on the side of the Syrians, and the long-robed figure appears to be their chief.[12] Another relief of Ramses II, in the Ramesseum, which shows him storming Debir (Tabor) in Palestine during his eighth year (*c.* 1280 B.C.), has a man escaping on a horse with a riderless horse following close behind.[13] The relief in the Ramesseum describing the Battle of Kadesh, fought by Ramses II against the Hittites (1288 B.C.), reveals an Asiatic in flight over the Orontes falling backwards from his horse into the river.[14]

Nearly all the riders on these reliefs are on the side of the enemy. But this need not imply a greater use of mounted warriors by the Syrians and Hittites than by the Egyptians, since most of the figures on the reliefs in any case represent the enemy, while the Egyptian side is largely occupied by the gigantic figure of Pharaoh. Thus on the Kadesh battle reliefs of Ramses II, which for once show the Egyptian as well as the hostile army in some detail, riding figures appear on the Egyptian side. The Kadesh relief at Luxor shows an Egyptian, apparently an officer,[15] carrying bow and quiver and riding side-saddle. Similarly in the top right-hand corner of the Abusimbel version of the battle there are three mounted Egyptians,[16] one with a bow and quiver, another with a quiver alone: they are riding against the line of Egyptian advance, and are evidently officers with a message from Pharaoh to his lagging troops.[17]

There is therefore some evidence that before the end of the Late Bronze Age mounted soldiers were being used by the armies of civilised states in the Near East. But whether it is possible to speak of cavalry in the sense of an independent body of riding troops, or whether riders were on occasion mixed in with the chariots, is not clear. A summary of tablets from Nuzi (late fifteenth century) does indeed say that the army of Mitanni was composed of infantry, chariots, and cavalry. But the reading of the tablet in question to give this sense is by no means certain.[18] The Egyptian battle monuments hardly suggest the existence of independent bodies of Horse. The abundant information in Egyptian inscriptions about horses gathered as booty or tribute resulting from the Syrian campaigns of Thutmose I and III in the early XVIIIth Dynasty provides no evidence for riding in war.[19] Similarly the curious Horse-book of Kikkuli from Boghaz Köy appears to be concerned exclusively with the training of chariot horses, even if they were perhaps ridden at some point during their exercises.[20]

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[10] Wrezsinski, *Atlas zur altägypt. Kulturgesch.* II, no. 36.

[11] *Ibid.*, nos. 45–6.

[12] *Ibid.*, no. 57.

[13] *Ibid.*, nos. 107–9.

[14] Rosellini, *Mon. dell' Egitto* I, pl. cx.

[15] Wrezsinski, *Atlas zur altägypt. Kulturgesch.* II, no. 64 A. Described as an officer under no. 57 note 1.

[16] *Ibid.*, nos. 169–78.

[17] Breasted, *Battle of Kadesh*, 32.

[18] Starr, *Nuzi* I 540. Mr. R. D. Barnett has kindly examined the matter and observes: 'The reference in the Nuzi tablets to cavalry I confirm to be, in my opinion, an exaggeration. The tablet in question simply mentions certain individuals who have horses, in contrast to those who have not. This is probably a class distinction and, though it may well imply that they were riding horses, it can hardly be said to prove it.'

[19] References to Breasted, *Ancient Records* II, are listed by Thomsen, *s.v.* '*Pferd*' in Ebert, *Reallexikon* X 113.

[20] See Hrozny, in *Archiv Orientalni* III (1931), 431 ff., and esp. 437–8.

The evidence from the Aegean, so far as it goes, presents the same picture. The ' Chariot Tablets ' from the L.M. II Palace at Knossos (*c.* 1400 B.C.), which register the equipment issued to the ' knights '[21] manning the chariots of the Minoan army, are particularly significant in this respect. There are indeed one or two tablets which instead of the usual corslet, chariot, and horses, only note issue of corslet and horse;[22] and it is just conceivable that these may record an issue of equipment to riders. But other explanations are clearly possible, and Evans may be right in suggesting that for brevity's sake the horse's head has been used to cover the chariot. Even if it were the case that these few horse-and-corslet tablets record equipment for mounted soldiers, their rarity would only emphasise the point that mounted men were exceptional in the Knossian army, whose main strength reposed like that of other Near Eastern armies in its chariot warriors. The dominance of chariotry in Aegean warfare during the late Bronze Age is clearly reflected in the poems of Homer.[23]

Two series of frescoes from the Megaron at Mycenae, the ' frieze '[24] and pieces of a similar type found by Tsountas,[25] show horses standing free and armed warriors beside them. These frescoes are usually regarded as scenes of chariot-harnessing with grooms and warriors waiting to mount; and the pole with the yoke of an obviously unharnessed chariot on a fragment from the Megaron frieze, and part of a chariot wheel on a fragment of the Tsountas fresco, lend support to this view. But two late sherds from Mycenae, with warriors holding or leading horses by the bridle, might be intended to show riders with their steeds.[26] A sherd from Minet el Beida, the harbour town of Ras Shamra, on the Levantine fringe of the Mycenaean world, assigned by Furumark to L.H. IIIB and therefore contemporary with our Figurine, does actually seem to represent a warrior with sword slung to his side riding upon a horse.[27]

While it is clear that cavalry in any sense played a comparatively small part in the warfare of the civilised world of the Near East during the Late Bronze Age, an acquaintance with riding, whether of horses or of other animals, can be traced back much earlier.

In Egypt riding of asses is already represented in the Middle Kingdom.[28] The horse, however, was certainly introduced into Egypt from abroad, doubtless together with the light spoke-wheeled chariot by the Hyksos in the eighteenth century, or not much before. But it is worth noting that the evidence for horse riding in Egypt may be as early if not earlier than that for the horse-drawn chariot.[29] A wooden statuette in the Metropolitan Museum, assigned to the early XVIIIth or even the XVIIth Dynasty, shows an Egyptian in white loin cloth riding a fine black horse.[30] To the first half of the XVIIIth Dynasty may belong a battle axe with open-work blade picturing a man or boy, apparently an Egyptian, galloping on a horse.[31]

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[21] For the appropriateness of this term for the chariot fighters of Late Bronze Age armies in the Near East, *cf.* Albright, ' Mitannian Maryannu, " Chariot Warrior ", and the Canaanite and Egyptian Equivalents ' in *AfO* VI (1931), 217 ff.

[22] *PM* IV 787 and fig. 763 i = *Scripta Minoa* II, no. 222; *cf.* no. 227.

[23] That riding was known and practised at the time when the poems were composed is clear from the similes, *Il.* XV 679 ff. and *Od.* V 371, leaving aside the doubtful episode of the Doloneia.

[24] Rodenwaldt, *Fries des Megarons von Mykenai*, 24 ff.

[25] Lamb in *BSA* XXV 164, B. 1. They are dated to L.H. II (Lamb, Rodenwaldt), but are probably L.H. III (Wace).

[26] Rodenwaldt, *op. cit.* 24, fig. 14. *FLMV*, pl. xxxviii 395. Both sherds are attributed by Furumark to L.H. IIIC1 (*MP*, fig. 26, 2, 9 and 1, 31).

[27] *MP*, fig. 26, no. 2, 5. *Syria* XIV (1933), 105, fig. 8.

[28] Erman-Ranke, *Aegypten* (1923), 583. Ass-borne litters are already represented in the Old Kingdom (*ibid.*, fig. 249).

[29] A scarab shows Thutmose I riding to battle in a horse-drawn chariot (Newberry, *Scarabs* (1906), pl. xxvii 4); and a chariot was painted on the walls of the Tomb of User, which was probably completed soon after the death of Thutmose I (Davies, *Five Theban Tombs* (1913), 23, pl. xxii, and p. 27 for the date of the Tomb). But there is literary evidence for the use of the chariot in Egypt by the time of Ahmose, the first King of Dyn. XVIII. See Breasted, *Ancient Records* II 7: where Ahmose, son of Ebana, follows King Ahmose when he rides abroad in his chariot. The same Ahmose captured ' a chariot, its horses, and him who was upon it as a living prisoner ' in a campaign in Naharin under Thutmose I (*ibid.* 81; *cf.* 85 for a similar exploit of Ahmose Pen Nekbet). For a criticism of the usual view that the horse and chariot were brought into Egypt by the Hyksos see Bissing, *AfO* XI (1937), 329 and note 17.

From Byblos in Phoenicia comes the sheath of a gold dagger ascribed to the eighteenth century B.C. with a (?) hunting scene which includes a man riding astride a large ass or horse.[32] The horse-burials and the metal bits discovered by Petrie at Gaza [33] confirm that the horse was being used in Palestine whether for riding or for driving by about this time.[34] But the Patriarchs in the Bible notoriously did not possess the horse, although they had the ass, and the horse may therefore have made its first appearance in Palestine not long before its introduction into Egypt.

In Mesopotamia the evidence for an acquaintance with riding goes back into the third millennium. But whether the animals ridden can be regarded as horses in every or in any case is very much open to question. Its name ' Ass of the Mountains ' makes it clear that the horse was brought into Mesopotamia from abroad, and evidently from the mountainous regions to the north or east. From the literary evidence, however, it appears that the horse was already a domesticated animal in Mesopotamia before the time of Hammurabi.[35] Most interesting are some tablets from Chagar Bazar, written when Iasmah Adad, a son of Samsi Adad I King of Assyria, was ruling there, concerning provisions for horses and for asses.[36] In two of the five tablets dealing with horses the provisions are for individual animals; but in the rest they are for ' yokes ', consisting in most cases at any rate of three animals, which may indicate three-horsed chariots like some depicted on later Assyrian monuments.[37] A letter from Mari of the same period as the Chagar Bazar tablets discusses a request from Zimrilim, King of Mari, to Aplahanda, King of Charchemish, for white horses; but only bays are available.[38]

Clay figurines that may be intended to represent horses have turned up on a number of early sites in Mesopotamia. Such model horses are mentioned by Langdon from the cemetery of Digdiggeh near Ur dating from the time of the Third Dynasty of Ur (and of the third millennium).[39] Similar figurines from the palace of Naram Sin at Brak in Assyria belong to the Agade period (*c.* 2300 B.C.).[40] Even earlier must be the model (?) horses from Gawra VI, which should correspond to Early Dynastic in Sumeria.[41] Two such models from Mound A at Kish seem to be the only examples from south Mesopotamia that can be assigned to so early a period.[42] Wild horses may just conceivably be represented on Tell Halaf vases back in the fourth millennium:[43] similar animals are seen on vases of Susa I.[44]

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[30] *Bull. Metr. Mus.* XI (1916), 86 and fig. on p. 85. It is suggested that the white markings on the horse may represent chalking or painting as practised on donkeys and camels in Egypt today. For an opinion on the authenticity of the statuette, see Bissing, *AfO* XI (1937), 329 note 25.

[31] *LAAA* XVIII (1931), 3, pl. I. *Cf.* a fragment of a relief from the Memphis Tomb of Harmhab, first King of the XIXth Dynasty, with an Egyptian riding astride a horse (*JEA* VII (1921), pl. 6).

[32] Dussaud, *L'Art Phénicien du IIe Millénaire* (1949), 38, fig. 5. I am indebted to Mr. Barnett for this reference and for an opinion on the probable date of the sheath.

[33] Petrie, *Ancient Gaza* I 3 ff.: esp. Tomb 411 (pl. lvii) with five human bodies in ' loculi ' and a single horse in the central pit. Cf. *ibid.* III 5, 14; and pl. xix, no. 294 for a bit from the ' Expiatory Deposit ' from which also came remains of horse. *Ibid.* IV 15: the skeleton of a single horse appears to be associated with the skeleton of one man (Burial 1474) in Pit TCH (pl. lxii). Cf. *ibid.* pls. xxiii and xxxv for bits.

[34] The horse-burials and metal bits are attributed by Petrie to the Hyksos. But see Bissing, *AfO* XI (1937), 333 note 61.

[35] Smith, *Early History of Assyria* (1928), 213 ff. *Cf.* Bissing in *AfO* XI (1937), 333. Wheeled vehicles already existed in Mesopotamia in the Uruk period, before 3500 B.C. (*Carts and Waggons* 178).

[36] *Iraq* VII (1940), 31 ff.

[37] For Assyrian three-horsed chariots see Nuoffer, *Der Rennwagen im Altertum* (1904), pl. 5, 23; 6, 25. *Cf.* Homer, *Il.* XVI 466–75; *Od.* IV 590.

[38] *Revue d'Assyriologie* XXXV (1938), 115 ff.

[39] *Der Alte Orient* XXVI (1928), 35. *Cf.* the terracotta plaque showing a rider from the same site (p. 90 note 46 below).

[40] *Iraq* IX (1947), 215, esp. pl. liv 10, with full references to similar clay models of about this period or earlier.

[41] Speiser, *Tepe Gawra* I (1935), 68 ff., pl. lxxvii 1 etc. For the date see Childe, *New Light on the Most Ancient East* (1952), esp. the table of correlations on *ibid.* 232–3.

A gold fillet that adorned the head of a woman in a grave in the Royal Cemetery at Ur shows a man riding an ass or horse in a kind of hunting scene reminiscent of that on the Byblos sheath.[45] Some terracotta relief plaques and figurines of riders mounted on what may be intended for horses have been attributed to a similar early period: while plaques with men riding astride a humped bull, and even an elephant,[46] and a cylinder seal with figures of Gilgamesh astride lions,[47] are further indications that riding was known and practised in Mesopotamia before 2000 B.C. Most interesting are one or two cylinder seals ascribed to the Gutian period, which have a picture of a man riding astride what may be a horse; and on one of these the man actually seems to be represented riding down his enemy in battle.[48]

From Susa in Elam come two remarkable engravings on bone, alleged to have been found together with other bone-engravings of men and animals and plants in levels 1·50 metres thick between those of Susa I and Susa II.[49] These pictures represent warriors, and the animals they ride are almost certainly horses. If correctly assigned to such an early horizon, these engraved bones are likely to be contemporary with the Early Dynastic period in Mesopotamia, the beginning of the third millennium.[50]

Horse bones are reported from a number of early sites in Turkmenia on the edge of the steppes north of the Iranian plateau.[51] It is not absolutely certain whether these bones belong to horses that were in any sense domesticated: but if the horse existed in that region in a wild state, there is no reason why it should not have been domesticated as early as the other admittedly domestic animals whose bones are found with those of horses in the settlements. If the horse was domesticated at all, and for any purpose, to provide milk, for instance, or meat, it is possible to imagine that the idea of using it for transport developed at a comparatively early stage: and if tamed enough to serve as a pack animal, it is difficult to believe that the horse was not mounted and ridden. The equipment of primitive riding is, after all, rudimentary; and Von Oppenheim describes how in quite recent times the Bedouin usually rode, even on plundering and war forays, without a saddle and with only a simple halter and a long cord to guide their horses.[52] Indeed, the possibility has for some time been admitted that the Battle Axe folk on the western fringe of the steppes, who appear to have domesticated the horse at an early period and introduced it into Scandinavia,[53] may have been accustomed to ride.[54]

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[42] Mackay, *A Sumerian Palace and the ' A ' Cemetery at Kish* II (1929), 213, pl. xlvii 11. But Smith, *Early History of Assyria* (1928), 213, is doubtful if these really represent horses.

[43] Schmidt, *Tell Halaf* I (1943), 39, pl. lvi. Bones of a small *equus* related to Syrian *equus hemippus* were recovered from a Halaf house at Tall Aswad in the Balikh Valley (*Iraq* VIII (1946), 124).

[44] *Mém. Del. Perse* XIII (1912), pl. ii 2.

[45] Woolley, *Royal Cemetery : Ur Excavations* II (1934), 299, pl. 139. The animal is there called a donkey.

[46] Legrain, ' Horseback Riding in Mesopotamia in the 3rd Millennium B.C.'. in *Bull. Univ. Mus. Pennsylvania* XI (1946), 27 ff., pl. ix, esp. no. 7 from the cemetery of Digdiggeh near Ur (see p. 89 above). *Cf.* Van Buren, *Clay Figurines of Babylonia and Assyria* (1930), 161, no. 769; 163, no. 785, etc.

[47] Ward, *Seal Cylinders of Western Asia* (1910), 67, no. 166.

[48] Legrain, *op. cit.*, citing: (1) De Clerq, *Catalogue Raisonée* (1888), no. 181 *bis*, with a man riding down his enemy; (2) Legrain, *Culture of the Babylonians from their Seals* (1925), no. 154. Smith, *Early History of Assyria* (1928), 385 note 7, regards no. 2 as of the Gutian period, but is doubtful if the animal is really a horse.

[49] *L'Anthropologie* XL (1930), 227, fig. 1, 8. *Mém. Del. Perse* XXV (1934), 199, fig. 38, no. 24. But the latter in particular is curiously reminiscent of representations on Early Iron Age reliefs of riding warriors with pointed helmets (see p. 92 note 64).

[50] For the date see Childe, *New Light on the Most Ancient East* (1952), 136 ff., and chart of suggested correlations *ibid.* 232–3.

[51] Childe, *Prehistoric Migrations in Europe* (1950), 150, with references to Anau, Shah Tepe, and Sialk. *Cf.* Jackson, in *Proc. of First International Congress of Prehist. and Protohist. Sciences* 1932 (1934), 156.

[52] Von Oppenheim, *Tell Halaf* (Eng. translation 1931), 150.

[53] The evidence is listed by Clarke, *Horses and Battle Axes*, in *Antiquity* XV (1941), 50 ff.

[54] *E.g.* recently by Clarke, *Prehistoric Europe* (1952), 302, modifying the opinion put forward in *op. cit.* above against the view that the Battle Axe folk were riders.

Horse bones are reported from Central Macedonia already during the local Early Bronze Age:[55] but in Greece itself remains of horse are conspicuously lacking from Neolithic and Early Bronze Age settlements, and have not been identified before the Middle Bronze Age.[56] Similarly at Troy, horse bones first appear in large numbers in Troy VI.[57]

It therefore looks as if the domesticated horse may have been introduced into Greece and into the Troad in the early part of the second millennium, by invaders who may perhaps be identified with Indo-European speaking peoples coming from the north, and in Greece at any rate with the Greeks.[58] If the connection of these invaders with the Corded Ware–Battle Axe folk is maintained, and if it is admitted that the latter had already domesticated and learnt to ride the horse, it follows that the Greeks when they entered Greece came as riders.[59]

Lucretius, in the passage quoted at the head of this article, assumed that the riding of horses in warfare preceded driving in the same way that knowledge of bronze preceded that of iron. Certainly if the horse was being ridden at all by peoples in the regions where it grew wild, it was presumably ridden by them in the hunt and in that warfare which in early times is apt not to differ very much in organisation and equipment from the hunting of the larger beasts. But if that is the case, why in the areas of high civilisation from India to the Aegean does the chariot appear to dominate warfare throughout the Bronze Age, while riding plays at best a very minor role?

In the light of later experience and the opinion of classical military writers the advantages of cavalry over chariotry are apt to seem great and obvious. But the fact is that in early times the war chariot probably enjoyed a decisive superiority over primitive riding in battle.[60] Even the solid-wheeled chariots of Early Sumerian times, if lacking in mobility, with their capacious arrow and javelin containers possessed a relatively great fire-power, and offered a firm fighting platform not enjoyed by a mounted man. With the evolution of the light spoke-wheeled chariot during the first part of the second millennium it became possible to combine this great fire-power with real mobility.[61]

The flat and open countries of the Near East are obviously well adapted for the deployment of such chariotry. But if chariots were in fact so efficient, why did they give place to cavalry at all? It may be assumed that gradual improvements in the art of riding, and in the breeding of horses, increased the potentialities of cavalry: while inventions such as the metal snaffle-bit, which appears during the course of the second millennium, would help to improve control of the ridden horse; although bits were used for chariot horses as well.[62] But a decisive factor was no doubt the development of military order, and in particular the appearance of disciplined bodies of infantry, with organised fire tactics and systematic use of devices like caltrops, which would be particularly effective against chariots.[63] Add to this the expense of construction and the difficulties of maintenance of chariots, which would render them uneconomic unless they presented very distinct advantages over cavalry. The fact that Greece and Italy, which became the great centres of military power, offer a terrain largely unfavourable for chariots would further contribute to their disuse.

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[55] *BSA* XXVII 45: horse bones from all periods, *i.e.* E.B.A. onwards, at Vardaroftsa. *Cf.* Heurtley, *Prehistoric Macedonia* (1939), 88.

[56] Valmin, *The Swedish Messenia Expedition* (1938), 58 and 138: horse bones from M. B. A. levels at Malthi.

[57] *AJA* XLI (1937), 597. The recent excavations have not yielded any sign of horse bones from levels before Troy VI. For clay heads of (?) horses from rims of bowls or dishes, see Schmidt, *SS*, nos. 3251–7. For a clay model horse's head from level II of the Karum at Kultepe, which must date from the beginning of the second millennium, see Özguc, *Ausgrab. in Kultepe 1948* (1950), 209, pl. lxvi, no. 431. The animals which draw the apparently spoke-wheeled waggons on some Cappadocian cylinder seals and seal impressions of the same period are thought to be horses (Porada and Buchanan, *Corpus of Anc. Near Eastern Seals in North American Colls.* I (1948), pl. cxxxiv, no. 893. Ward, *Seal Cylinders of Western Asia* (1910), 311 ff., nos. 976–9. De Clerq, *Cat. Raisonée* (1888), pl. xxvii, nos. 284 and 286).

[58] For a statement of views on this subject see Childe, *Dawn of European Civilisation* (1947), 73. Cf. *Prehistoric Migrations* (1950), 150.

[59] Not in any case as drivers of chariots! Wheeled vehicles are not attested in Central and Northern Europe before *c.* 1000 B.C. (*Waggons and Carts,* 188 ff. Clarke in *Antiquity* XV (1941), 50 ff.).

[60] The position of the chariot in early warfare is aptly compared by Childe with that of the tank in modern (*New Light on the Most Ancient East* (1952), 151).

[61] The essential factor in the development of the light mobile chariot was the spoked wheel (*Waggons and Carts* 188).

[62] For early metal bits see Potratz, *AfO* XIV (1941), 1 ff. Saddles, spurs, and stirrups are all very much later developments.

The gradual shift of emphasis from chariotry to cavalry in civilised countries took place during the first half of the first millennium B.C. Mounted warriors appear on Syro-Hittite reliefs of the Early Iron Age (eleventh–tenth centuries B.C.), and on the contemporary reliefs from Tell Halaf.[64] By the ninth century B.C. cavalry begins to form an important element alongside chariotry in the Assyrian and other Near Eastern armies. In 854 Benhadad II, King of Damascus, faced Salmanasar of Assyria with an army which included 4,800 chariots and 1,900 cavalry; while his successor Khazael was defeated by the same Salmanasar with a loss of 16,000 foot soldiers, 1101 chariots, and 468 horsemen. By the seventh century cavalry in the Assyrian army has become well established.[65] The successes of the Cimmerian horsemen who swept over the Near East during the course of the seventh century may have helped to accelerate the development of the cavalry arm in civilised states.[66]

In Greece armed horsemen are represented from at any rate the Geometric period (*c.* 900 B.C.) onwards. Several Attic Geometric vases have pictures of riding warriors,[67] and towards the end of the period (late eighth century B.C.) regular cavalry processions are seen on vases.[68] A cremation urn from a tholos tomb at Mouliana in Crete with a picture of an armed man upon a horse has usually been assigned to the Protogeometric period (before 900 B.C.)[69]: but Desborough has recently shown good reason for regarding the vase as a survival of an earlier style in a provincial region, and contemporary therefore with Geometric.[70] Some clay figurines of horsemen from Asine have been called Protogeometric, but not apparently on very adequate grounds; they seem hard to distinguish from admittedly Archaic figurines found in the same area and elsewhere in Greece.[71]

That the advantages of cavalry over chariotry were not at first so great as may be supposed in retrospect is reflected in the fact that war-chariots long survived in certain areas. Even in Greece the military procession of the Eretrians described by Strabo, where chariots figure alongside cavalry and hoplites, may point to a period not so very remote when chariots were used in war.[72] And the evidence of Homer and of the chariot representations on Geometric vases might perhaps be interpreted in the same sense.

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[63] For the use of caltrops by the Romans against scythed chariots see Vegetius III 24. The Assyrians also employed caltrops according to Des Noettes, *L'Attelage : Le Cheval de Selle* (1931), 200, fig. 34.

[64] Von Oppenheim, *Tell Halaf* (Eng. translation 1931), 149 ff., pl. xviii B. Three orthostats have reliefs of armed horsemen with helmets and circular shields. Three other riders and a kneeling warrior holding a horse by the bridle are depicted on a statue base. See *Der Alte Orient* XXXVIII (1939), 70 for similar horseman-reliefs from the Syro-Hittite area: Maraş, Sencirli, Charchemish, and Tell Ahmar.

[65] Thomsen, *s.v.* '*Pferd*', in Ebert, *Reallexikon* X 115. Des Noettes, *op. cit.* 197 ff. Maspero, *Hist. Anc. des Peuples de l'Orient* (ed. 1905), 439 and 443, for Benhadad and Khazael.

[66] Childe, *Prehistoric Migrations in Europe* (1950), 288.

[67] E.g. *AM* XVIII (1893), pl. viii 2 from the Kerameikos. Pfuhl, *Malerei und Zeichnung der Griechen* (1923), III, pl. 4, 14–15. Lorimer, *Homer and the Monuments* 233, fig. 28.

[68] Hanfmann, *Horsemen from Sardis* in *AJA* XLIX (1945), 575 and note 15. *Cf.* the frieze of horsemen from Prinias in Crete.

[69] *AE* (1904), 21 ff., pl. 3.

[70] Desborough, *Protogeometric Pottery* (1952), 269.

[71] Frödin and Persson, *Asine* 310, fig. 213, 4 ('Transition to the Geometric'); 333, fig. 225, 6 and 7 ('Geometric'). For similar figurines from Mainland Greece, e.g. *Tiryns* I (1912), 83, fig. 20. *Perachora* I 228. *Argive Heraeum* II 40, nos. 244–7. For the dating of such figurines see Ure, *Aryballoi and Figurines from Rhitsona* (1934), 61 ff., found in graves of the early sixth century and later. *Cf.* similar figurines of horsemen of Iron Age date from (1) *Cyprus*. Murray, *BM Excavs. in Cyprus* (1900), 70, fig. 112. *SCE* II, pl. xiv 1 (no. 67), xvii 2 (no. 7) and 3 (no. 16) from Amathus: pl. clxxxii 8 (no. 983) from Idalion: pl. ccxxiv 1 (no. 922) from A. Irini. (2) *Syria*. *LAAA* VI (1914), 95 pl. xxvi *b*, 2–4 from cremation burials in the Charchemish area. (3) *Babylonia*. Koldewey, *Das wiedererstehende Babylon* (1913), 228, fig. 149.

[72] Strabo X 1, 10, p. 448. Ancient stele in the temple of the Amarynthian Artemis recording 3000 hoplites, 600 horsemen, and 60 chariots, to make the procession.

As late as the fourth century B.C. chariots were still being used in warfare, and not only by backward peoples of the barbarian fringe like the Britons.[73] The Persians had regularly employed scythed chariots; and Persian scythed chariots continued to form a part of the Seleucid army.[74] Molon, satrap of Media, who rebelled against Antiochus III in 221 B.C., had them in his forces;[75] and they were used by Antiochus III at the battle of Magnesia (190 B.C.), where, however, their discomfiture by the organised fire tactics of Eumenes, and the consequent havoc that they caused to their own side, may have led to their discontinuance.[76] But even later than this Mithridates used them.[77]

Still more interesting in this connection are the war-quadrigas for which the great Greek city of Cyrene was famous.[78] Five of them along with 300 war horses were given by the ambassadors of Cyrene to Alexander when he visited Ammon in 331 B.C.:[79] and Ophellas in his expedition against Carthage (309–8 B.C.) had 100 chariots with over 300 drivers and soldiers to man them.[80] Cyrenaean inscriptions of the fourth and third centuries dealing with the military organisation of the city mention the chariot officers (λοχαγοὶ τεθρίππων).

Even the Romans appear, from a passage in Vegetius, to have employed special two-horse chariots against the elephants of Pyrrhus in 278 B.C.[81] The effectiveness of chariotry upon occasion against the disciplined armies of a civilised state is shown by the battle of Sentinum (295 B.C.), when the Roman cavalry was put to flight by the Gallic chariots, and complete disaster was averted only by the Roman general on that wing devoting his life to the infernal gods.[82]

It seems clear, therefore, that the meagre evidence for the use of mounted warriors by civilised nations in the Bronze Age does not necessarily imply that riding was little known or practised; and riding even in warfare may have been adopted from quite early times by barbarian peoples among whom the horse lived wild. The chariot was preferred to riding in warfare for the simple reason that chariots were very much more effective than cavalry, until developments in military discipline and tactics, and improvements in the art of riding, gradually reversed the position, and cavalry became the dominant mobile arm.

M. S. F. HOOD

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[73] Arrian, *Tactica* 19.

[74] Launey, *Recherches sur les Armées Hellénistiques* (1949–50), I 568–9. *Cf.* Bevan, *The House of Seleucus* (1902), II 290 and note 3.

[75] Polybius V 53, 10.

[76] Livy XXXVII 41.

[77] Vegetius III 24.

[78] Launey, *op. cit.* 596, with references. Cf. *ibid.* 890, for the continuance of war-chariot races at Athens and elsewhere in Greece into Hellenistic times.

[79] Diodorus XVII 49, 2.

[80] Diodorus XX, 41 1.

[81] Ridgeway, *The Origin and Influence of the Thoroughbred Horse* (1905), 307, citing Vegetius III 24.

[82] Livy X 28.

THE NEOLITHIC POTTERY OF KNOSSOS

(PLATES 29–32)

This article is the result of several months' study of the neolithic pottery of the Stratigraphical Museum at Knossos, which I undertook in the hope of adding more detail to the descriptions published by Sir Arthur Evans and Dr. D. Mackenzie. Evidence obtained from such a study is not, of course, so valuable as it would have been if these excavators themselves had had the opportunity to deal with their neolithic collections with the greater attention that they devoted, for obvious reasons, to the Minoan material. But it is hoped that the present account may make the results of their discoveries available for use in connection with future excavation of the site.

The presence of neolithic pottery at Knossos was realised in the first years of excavation, and received a certain amount of attention in summary and provisional reports, concerned as these were necessarily with the startling importance of what later came to be known as the Minoan levels.[1] Evans understood at once the nature of the mound on which his ' Mycenaean Palace ' stood, and made soundings to virgin soil at several different points. In dealing with the pottery he was assisted by Mackenzie, who made a careful analysis of the material from two Test Pits, and was able to recognise three stages within the neolithic period, an arrangement which was followed in the definitive publication.[2] The somewhat later discovery of neolithic houses beneath the Central Court reinforced the conclusions already reached.[3] Subsequent discussions of the material have been based on the work of Evans and Mackenzie rather than on independent observation, with the exception of some notes in an article by Professor V. G. Childe.[4]

When the site was excavated, not all the sherds were kept, as a study of Mackenzie's notebooks [5] shows. The number of sherds which were ' rejected ' are listed; they were those which gave no indication of decoration or shape. Other sherds, including apparently all the material from some nine Test Pits, were ' reserved ' and stored in the Stratigraphical Museum on the Palace site. Others were taken to the Iraklion Museum, where they are now on view.

In 1934 J. D. S. Pendlebury, then Curator of the Knossos site, completed the very necessary task of rearranging, listing, and dating the stratigraphical material. He published plans showing the provenance of each box of sherds, and a detailed catalogue describing its

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List of Special Abbreviations.

E.M., M.M., L.M.: Early Minoan, Middle Minoan, Late Minoan.
E.N., M.N., L.N.: Early Neolithic, Middle Neolithic, Late Neolithic.
BASPR: *Bulletin of the American School of Prehistoric Research.*
Belleten: *Türk Tarih Kurumu, Belleten* (Ankara).
Dhimini and Sesklo: C. Tsountas, Αἱ προϊστορικαὶ ἀκροπόλεις Διμηνίου καὶ Σέσκλου (Athens, 1908).
Festos: L. Pernier, *Il Palazzo Minoico di Festos.*
Forschungen auf Kreta: Fr. Matz (*ed.*), *Forschungen auf Kreta 1942* (Deutsch. Arch. Inst. Berlin, 1951).
OIP: *University of Chicago. Oriental Institute Publications.*
P.Mac.: W. A. Heurtley, *Prehistoric Macedonia* (Cambridge, 1939).
PT: A. J. B. Wace and M. S. Thompson, *Prehistoric Thessaly* (Cambridge, 1912).
Studies: H. Frankfort, *Studies in the Early Pottery of the Near East* (London, 1924, 1927).
Thermi: W. Lamb, *Excavations at Thermi in Lesbos* (Cambridge, 1936).

[1] *BSA* VI 6, 17, 27, 64, 78, 86; VII 2, 36, 103; *Man* I 184, no. 146; *BSA* VIII 23, 121; IX 2, 40, 51, 94, 116; X 2, 18 f., 22 f., 25 f., 30, 48 and figs. 7, 8; XI 20.

[2] *JHS* XXIII 157 ff.; *PM* I 32 ff.

[3] *PM* II 1 ff.

[4] *BSA* XXXVII 31.

[5] In the Library of the British School of Archaeology at Athens.

contents.[6] For convenience the various sectors of the site were lettered A, B, C, etc., and divided into sub-sectors with Roman numerals; then each find-spot from which sherds came was numbered with Arabic figures: thus, for example, sherds from a box marked J II 10 are from a particular spot in the southern part of the North Entrance Area. This catalogue distinguished between the nine sub-phases of the Minoan period, but as a general rule not between the neolithic sub-phases.

Copying Pendlebury's arrangement and numbering, I began by compiling a second catalogue which distinguished the separate neolithic phases as defined by Mackenzie wherever it was possible; and by the time I had worked through all the material for this purpose I had obtained a large amount of additional evidence, observed no doubt by Mackenzie, but hitherto unpublished.

My thanks are due to Dr. F. H. Stubbings for having helped and supervised my preparation of this article, to Mr. M. S. F. Hood, who also has advised me and who took many of the photographs, to Miss E. A. B. Petty, who kindly drew for me several of the sherds of FIGS. 9 and 13, to Professor V. G. Childe and Dr. W. Lamb for suggesting improvements to the text, and to Dr. N. Platon, Ephor of Antiquities in Crete.

STRATIGRAPHY

It is necessary to examine the stratigraphy not only in order to discover the topography of the mound in neolithic times, but to find grounds for distinguishing phases in the development of the pottery. The fullest and most valuable evidence comes from Test Pits which were excavated through several metres to virgin soil. Considering the nature of occupational débris and the subsequent use of the site, it would be foolish to expect each pit to tell exactly the same story, and it is the differences between them which are most interesting.

TEST PIT B I 1.[7]

This pit, in the centre of the West Court, was one of the two described by Mackenzie. The table shows the incidence of various wares and types of ornament.[8]

M.N. is here defined as the period when rippled ware is at its height. The associated coarse ware is buff or grey with an even smoothed surface which has little or no burnish. The positive feature of the levels above M.N. is a different coarse ware, with a red surface scored through wiping, which begins in L.N. and continues in E.M. (The first metre of B I 1 is a mixed L.N. and E.M. stratum, and included E.M. fine wares which are not shown on the Table.) The negative feature is a decrease in the number of incised and rippled pieces.

The coarse wares from levels beneath M.N. are better burnished, but this superior surface treatment seems to go together with poorer levigation and irregular firing. In the lowest strata coarse ware is often variegated, buff with black blotches, and large white grits are visible in the break. Plastic decoration (flanged handles, scalloped rims, and the like) is not normally found save with this most primitive type of coarse ware, and the presence of the two classes together may be taken as defining a phase E.N. I.

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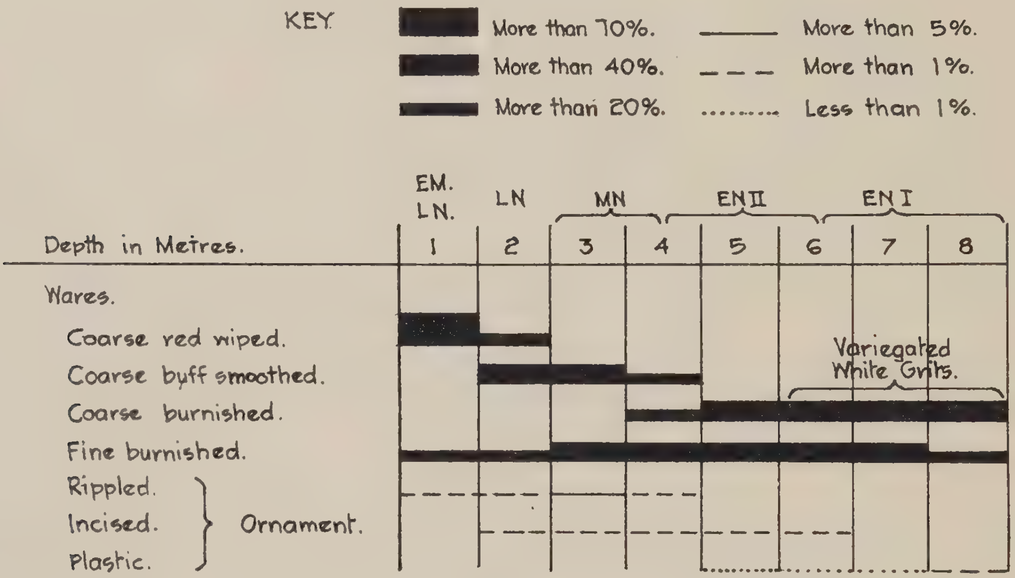
[6] J. D. S. Pendlebury, *Guide to the Stratigraphical Museum in the Palace at Knossos* (1933). *Dating of the Pottery in the Stratigraphical Museum* (1935).

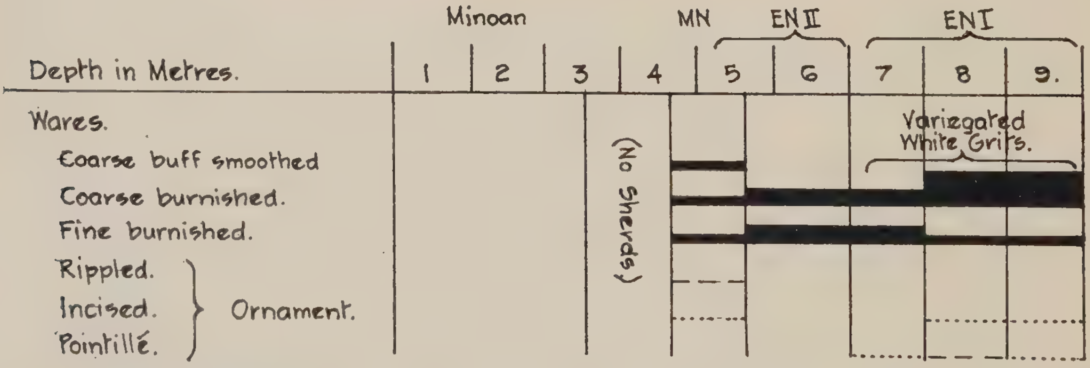
[7] The exact situation is not marked on Pendlebury's plan. There is, however, reason to suppose that it was the same pit as B I 3, also near the centre of the West Court. The boxes marked B I 1 contain material excavated in 1901, in separate metres to a depth of eight metres. After the fourth metre there is a sudden decrease of 75 per cent in the actual number of sherds found. The boxes marked B I 3 contain material excavated in 1902 from levels five to eight metres down, while the upper strata are apparently non-existent. I suggest that B I 1 was dug with a step in the trench at the five-metre line, and that in the next season the step was taken out. This theory, hypothetical as it must remain, is the only one which will account for the facts of the extant material as it is labelled.

[8] E.M. fine wares are omitted as beyond the scope of the present study.



E.N. II, the stage between E.N. I and M.N., has no positive defining feature. The coarse ware is well burnished and not variegated. The only usual decoration is incision, which begins before rippling.[9]

Test Pit B I 10.



This pit beneath the M.M. houses of the West Court shows how upper neolithic levels have been removed and replaced by E.M. and M.M. deposits. In the lower levels the coarse wares present the same picture as in B I 1. The paucity of incised ware is to be explained by the fact that there is a separate box of decorated sherds and rims obviously selected from the rest of the material. Incised sherds of the ' punctuated ribbon ' or *pointillé* style are shown as a separate category because they seem to have a different distribution from the other incised pieces. They occur only in the E.N. I levels. The handled bowl of PLATE 30, *c* was restored from pieces from the seventh and eighth metres of this pit. Other types of incised ornament also occur here in E.N. I, and their absence in the lowest levels of B I 1 must be an accident, not surprising in view of the small numbers of sherds concerned. In B I 10 there is no plastic ornament.

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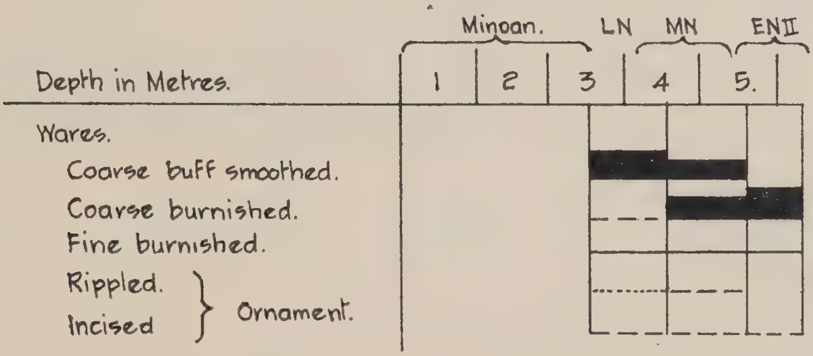
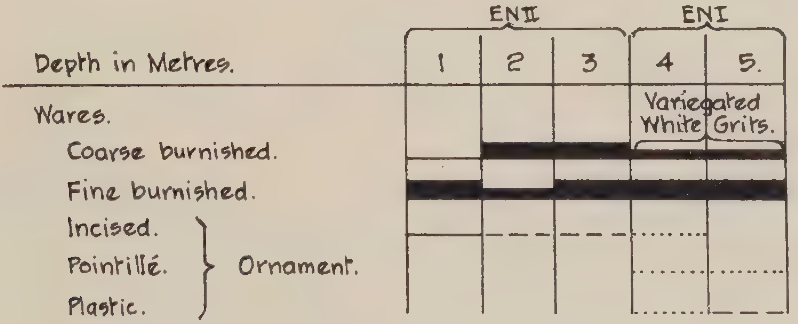
[9] *PM* I 36.

TEST PIT B I 13.



This pit is in close proximity to B I 10, and perhaps for this reason was not continued to virgin soil. As in B I 10 the upper neolithic strata were cleared by Minoan building. In the material from 2·6 to 3·6 m. there is no coarse red wiped ware, although rippled decoration has already begun to decline. The M.N. strata of both this pit and B I 10 lie at a lower level than the corresponding stratum in B I 1. Since they are slightly to the west of the latter, it seems that the mound sloped downwards from east to west at this point, and that these pits investigate its western edge.[10]

TEST PIT D IV 1.



This was a sounding beneath the cists of the Magazine Corridor. The upper neolithic levels were removed during the construction of the cists. E.N. I is fully illustrated, with characteristic variegated coarse ware, and both *pointillé* incision and plastic decoration. Above, there are three metres of E.N. II material with an increasing proportion of incised ware, but as yet no sign of M.N. rippling.

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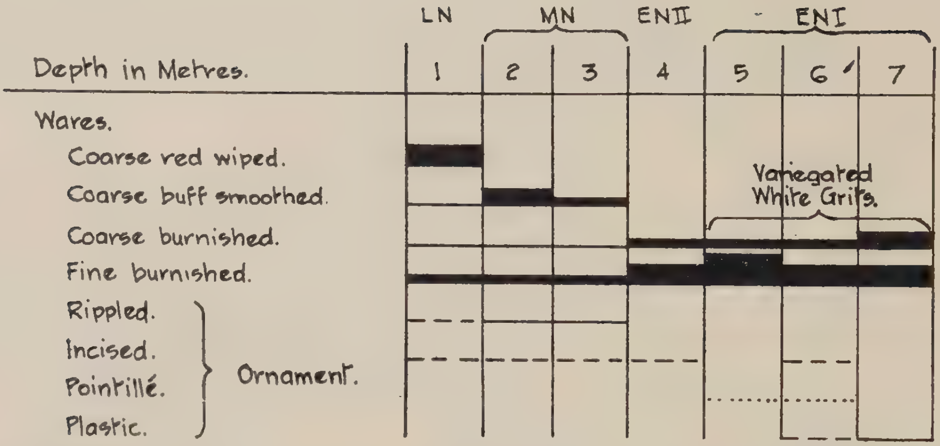
[10] These conclusions are reinforced by the evidence from deep soundings in Area C, *i.e.* Test Pits C I 1 and C IV 3 (*Dating of the Pottery in the Stratigraphical Museum* I 7); but since the exact situation of C I 1 is not known, and for various other reasons, these pits are not so suitable for detailed analysis as those in Area B.

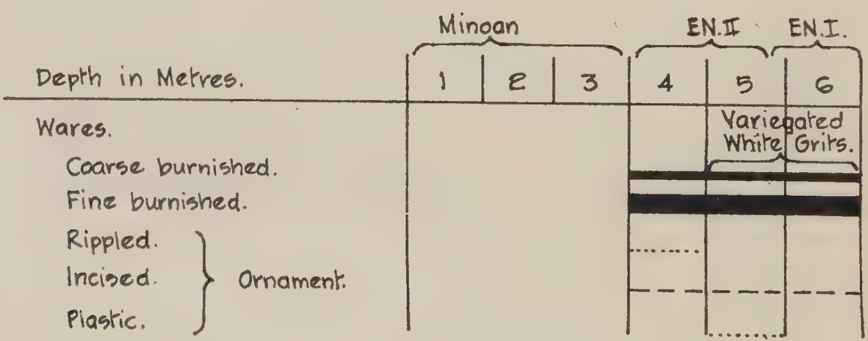
Test Pit D VII 3.



This pit was excavated in the threshold of one of the Magazines, near D IV 1, but had upper neolithic levels preserved, giving a sequence nearly as complete as in B I 1. Evans writes, 'The platform on which almost the whole of the Western Wing of the Later Palace rests represents the planing off of earlier strata, including the top layers of the Neolithic deposit.'[11] The pottery from the sounding shows that at this point at least a certain amount of L.N. deposit was left intact, but the fact that the M.N. and E.N. II strata are nearer the surface than in B I 1 supports Evans' statement that part of the mound is cut away.

In the lowest levels it is again possible to define a separate E.N. I phase, with *pointillé* incision and plastic ornament.[12]

Test Pits E I 4, E I 5.

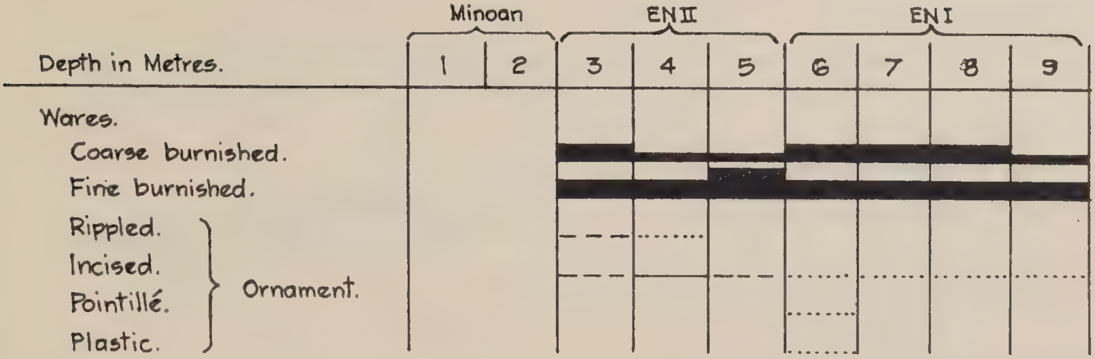


The exact site of neither of these pits is known, but they were somewhere near the north 'Lustral Area'.[13] The L.N. and M.N. deposits have been cut away by Minoan building,

[11] *BSA* IX 94.

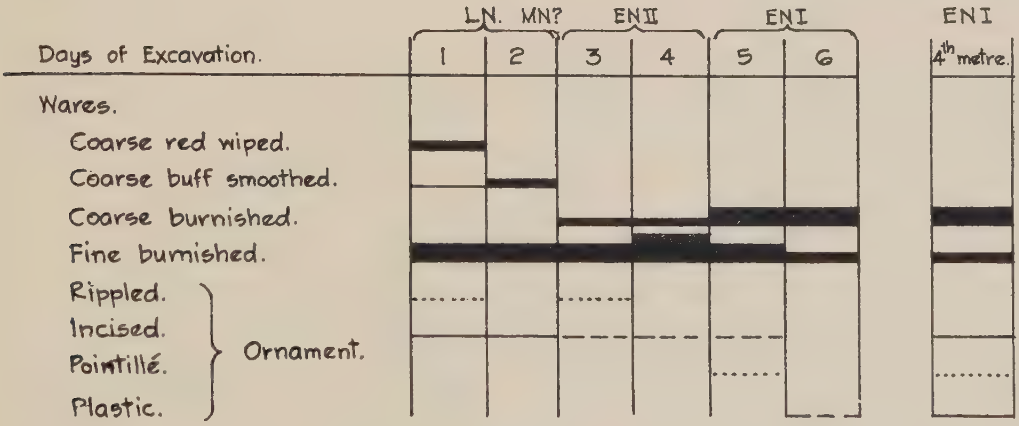
[12] In Pendlebury's catalogue a seventh metre is not mentioned. But Mackenzie's label from inside one of the boxes reads '3rd m. from below and 5th from above', which implies seven metres. Fortunately, in a box which Pendlebury must have overlooked, one or two of the sherds are marked '7th m.', which is sufficient to identify the collection.

[13] There were also other deep soundings at E III 6 and E III 7; but, since occasional M.M. sherds occur here at a depth of as much as 6 m., the neolithic levels cannot be regarded as undisturbed, and so are not described here in detail (cf. *Dating of the Pottery in the Stratigraphical Museum* II 6).



but once occupied a higher level than the corresponding strata in D VII 3, since in the third metre of E I 5 we are still in the latest phase of E.N. II. The high part of the mound therefore extended beyond the Central Court northwards at least as far as the 'Lustral Area'.

Test Pit I II 9.[14]



This sounding beneath the Central Court does not afford very satisfactory evidence, since the boxes are labelled according to the days of excavation, not according to depth. It is not known how the box marked '4th metre' fits into the sequence, although from the appearance of the sherds it may well have come from the bottom; it is a selected collection, with an undue proportion of decorated pieces and rims.

The absence of a well-defined M.N. stratum should cause no surprise. The builders of the L.N. houses beneath the Central Court were capable of removing the débris left by their predecessors, and there is every indication that the top of the mound was levelled in L.N. times.

Pointillé incision and plastic ornament are once more confined to the lowest levels.

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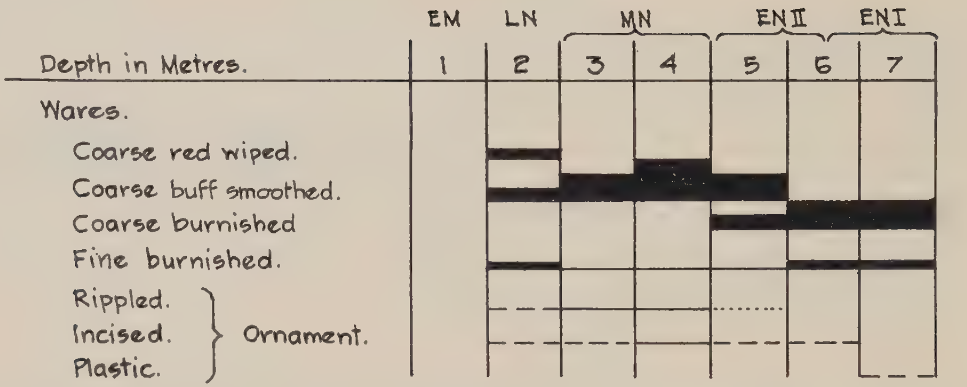
[14] All the boxes containing material from the Test Pit are marked I II 9. Pendlebury catalogues all or most of them as I II 10, but shows the position of I II 9 only in his plans (*Guide to the Stratigraphical Museum in the Palace at Knossos* 16, *Dating of the Pottery in the Stratigraphical Museum* II 8, III, plan 13).

Test Pit K II 5.



The evidence of this very prolific sounding in the North-east Quarter corresponds remarkably closely with that of B I 1 in the West Court. In this sector the neolithic mound sloped towards its eastern edge, since the overlying E.M. strata, sometimes as much as 1·40 m. thick, either remained *in situ* in spite of M.M. levelling operations, or had to be brought there as fill during the course of them.[15]

Using criteria established by the study of the Test Pit material, it is usually possible to know the date of other collections of neolithic sherds from the site, even when they are intrusive in Minoan levels, provided only that there is a sufficient number. Their evidence is a helpful addition to the data from the Pits. The find-spots from which such collections come are shown in the plans, FIGS. 1–3.

FIG. 1 shows the distribution of E.N. finds. They are concentrated in the south-east sectors, where a great cutting for the Domestic Quarter removed all the strata above, leaving the E.N. I level easily accessible beneath the Palace floors. On the west side and in the north-east comparable levels were reached only by deep pits. In Area G I, on the other hand, a little E.N. I pottery was found not far beneath the Palace Floor, suggesting perhaps that the original settlement was founded on a knoll or slight rising. There are several E.N. collections from Area E, which is, however, much disturbed through the building of the so-called Dungeons. The steep Northern Entrance, Area J, cut away a section of the mound, and, in its northern part, exposed an E.N. stratum, as is shown by a few sherds intrusive in M.M. contexts.

FIG. 2 shows the distribution of M.N. finds. They are absent, of course, from the south-east; elsewhere they have been exposed mainly through the Test Pits, save in Areas E and L, where they are not far below the present surface.

FIG. 3 shows the distribution of L.N. finds, concentrated in the west, the centre, and the north-east. This period is not quite fully documented by the Test Pits: whereas the second metres of B I 1, D VII 3 and K II 5 still have some rippled sherds and smoothed buff coarse ware as well as the L.N. wiped red class, many of the probes in the West and Central Courts disclose a still later stage where all the coarse ware is the L.N. type and there are no rippled pieces. From the evidence of the Central Court it seems that this phase is separate from

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[15] See Pendlebury's analysis of the contents of the boxes from this area, *Dating of the Pottery in the Stratigraphical Museum* II 9.

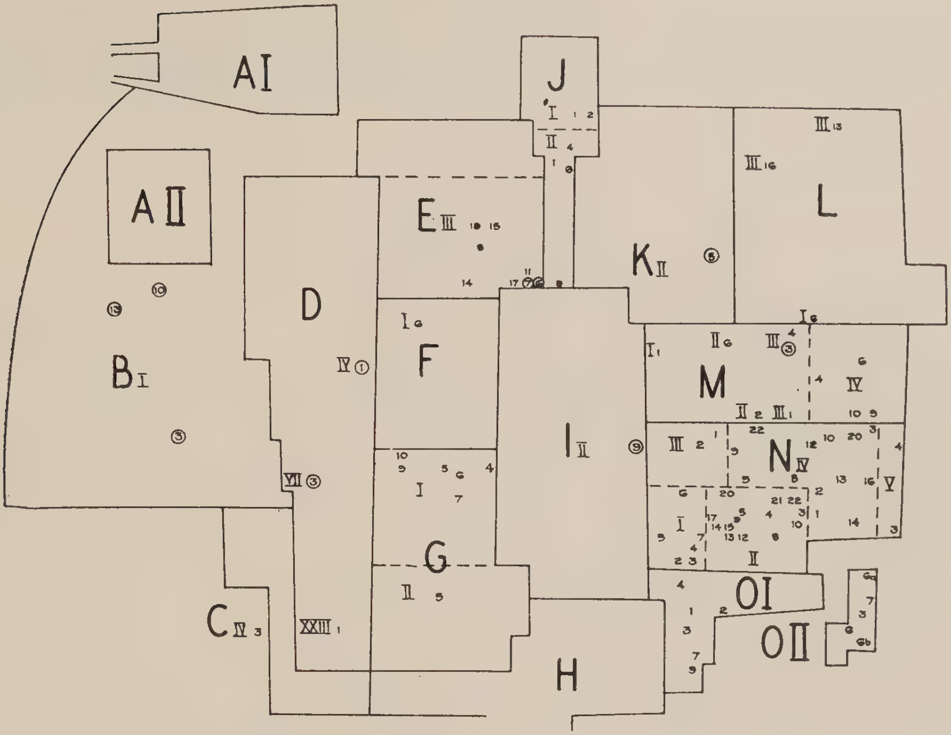
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FIG. 1.—DISTRIBUTION OF E.N. FINDS ON THE KNOSSOS MOUND.

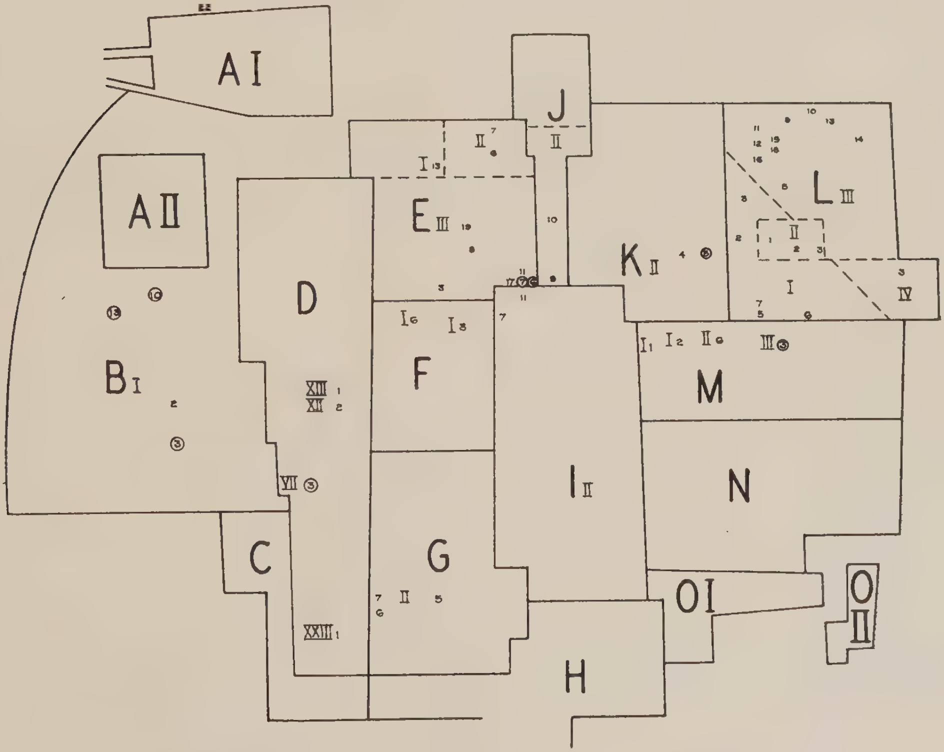
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FIG. 2.—DISTRIBUTION OF M.N. FINDS ON THE KNOSSOS MOUND.

E.M., although in the West Court the picture is not so clear; for, where L.N. and E.M. wares occur together, as in the first metre of B I 1, it is impossible to distinguish between the coarse ware of the two periods, and some of the fine wares are not without features in common.

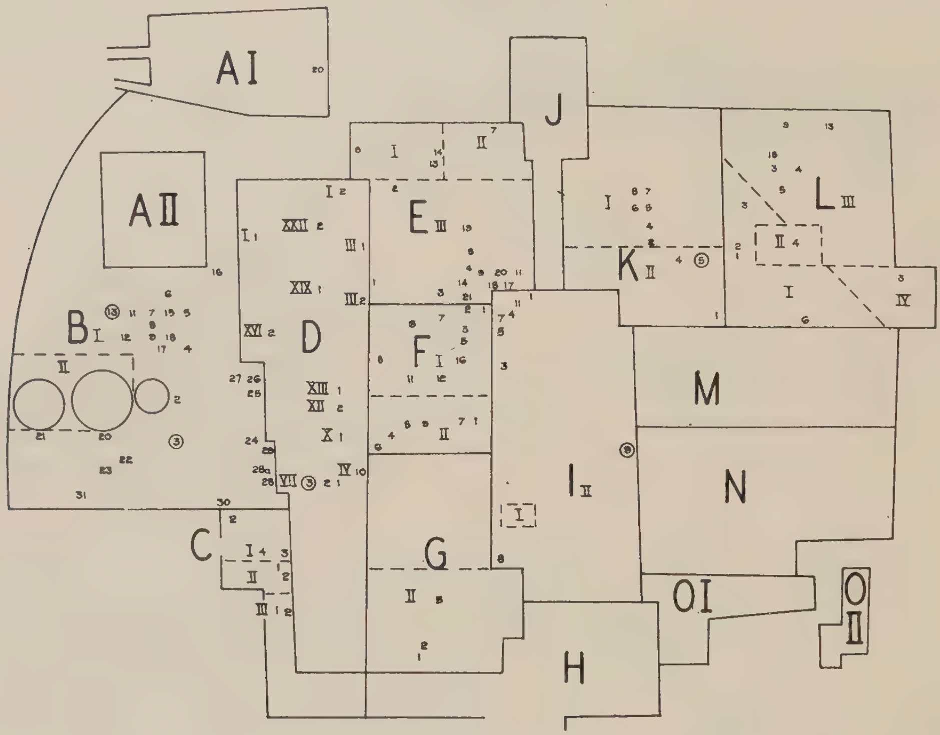

Fig. 3.—Distribution of L.N. Finds on the Knossos Mound.

It is convenient to describe the wares of the various phases under the following headings. One must, however, remember throughout that the divisions drawn between the phases and between the different fabrics and shapes are arbitrary, as is usually the case with hand-made pottery.

Early Neolithic I.

1. Coarse burnished ware.
2. Fine burnished ware.
3. Ware with plastic decoration.
4. Incised ware.

Early Neolithic II.

1. Coarse burnished ware.
2. Fine burnished ware.
3. Incised ware.

Middle Neolithic.

1. Coarse ware without high burnish.
2. Fine burnished ware and rippled ware. (Incised ware as in Early Neolithic II.)

Late Neolithic.

1. Coarse ware with striated surface.
2. Fine burnished ware and rippled ware.
3. Decorated ware.

Miscellanea.

Early Neolithic I

1. *Coarse Burnished Ware, Red, Black, or Variegated*

Already in the lowest levels the pottery is carefully made and attractive, although not very well fired.

In the larger vessels the biscuit varies in thickness between 1 cm. and 0·5 cm. It is usually, though not always, evenly levigated. Sometimes quite large fragments of gravel or grit are visible in the break, but, as a general rule, the tempering material, gypsum from the 'Hill of the Gypsades', was powdered fine and appears as small white flecks.[16] There is no example of tempering with sand or organic material. Very rarely sherds occur which are riddled on the inside surface, an appearance which is due to the disintegration of temper.

The firing is not so good as in the later neolithic phases, but the fabric does not crumble. Surface colour may be black, grey, buff, or red. Some sherds have a dark inside surface and are lighter outside, and the opposite, a darker exterior, occurs also, though seldom. Where such differences appear the break shows the core changing gradually from black or grey to red or buff, indicating that the surface colour is due to firing, not to the application of a slip. Sometimes where both surfaces are light, the core is dark through insufficient firing. Variations of colour on the same surface, such as black blotches on buff, are common, and are also probably due to irregular firing in the case of these early coarse wares, although a different explanation may account for the brighter 'rainbow' variegations on some of the fine wares.

The proportion of dark and buff sherds is usually equal, and most are well burnished. One effect of this process is to produce a more determined colour, as may be seen when the tool was not passed evenly over the surface but left red scribbings on buff, or black on grey, as in PLATE 29, *a*, 5. But a more thorough burnishing was the rule, and shiny black or bright red sherds are plentiful.

Complete profiles of vessels are difficult to reconstruct, owing to the shattered nature of the material. Shapes may be classified under the following headings; except where there is a note to the contrary the type continues to be common in M.N. and L.N.

Type 1. *Open Bowls with Rounded Profile*

By far the most common is a deep store-jar, FIG. 4. 1–3. Large examples with rim diameters of 30 cm., 40 cm., or even 50 cm. are usual, although smaller types, often with somewhat thinner walls, and rim diameters of about 20 cm., are not rare. Large vertical strap handles are placed some distance below the rim, or, occasionally, on the rim. They do not project above it. No vessel is sufficiently preserved to show how many such handles there were originally, but from the large number of handles among the sherds, it seems possible that there may have been two or four to each. Shallower bowls of various sizes are also very common, FIG. 4. 11, 13. The wall of the vessel may be thickened at the rim, FIG. 4. 12. Very small examples, FIG. 4. 7, 8, may have been used as lamps or, possibly, for votive purposes.[17]

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[16] The source of the clay also was probably in the immediate vicinity.

[17] *PM* I 37, II 12, *MA* XIX 151.

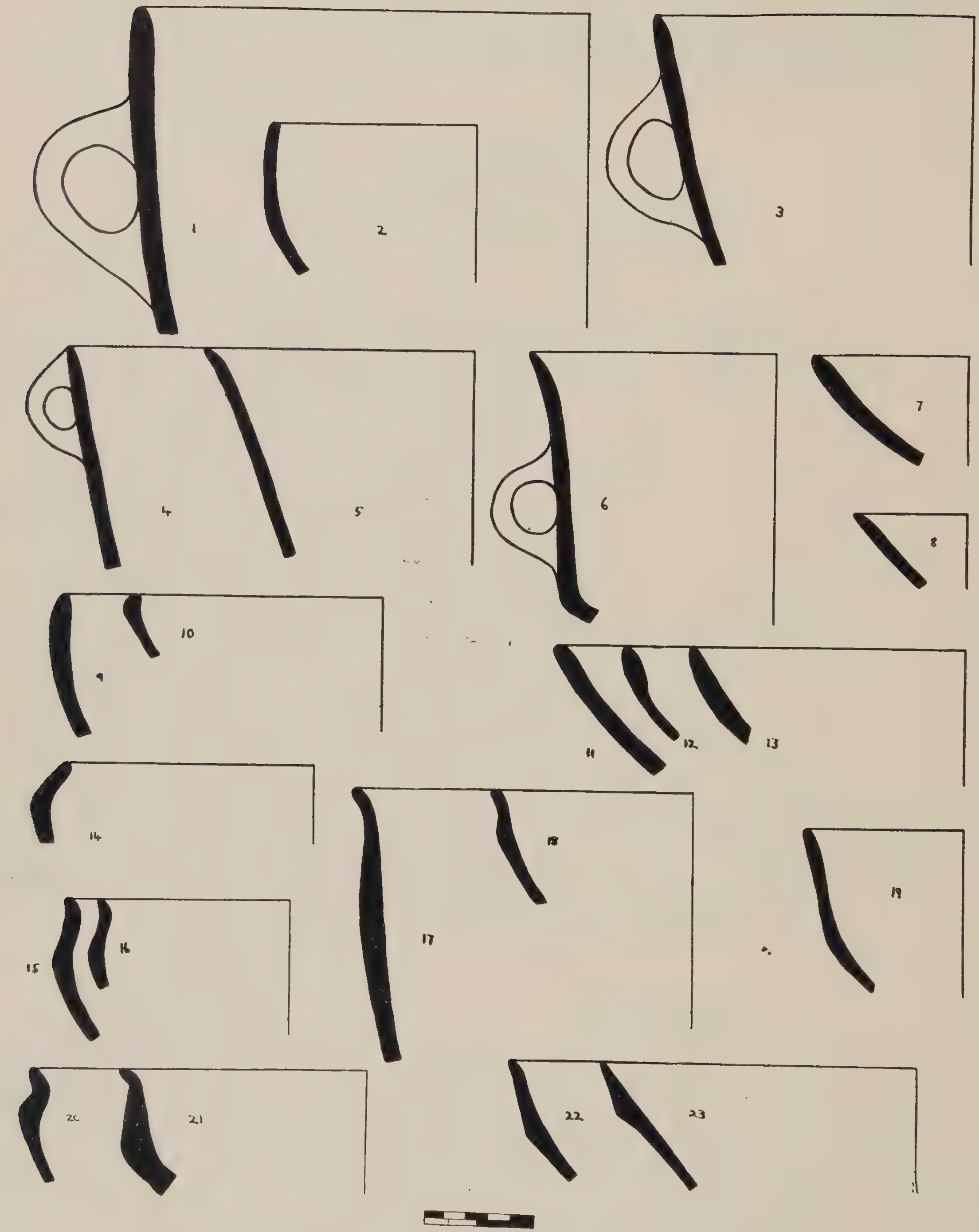
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Fig. 4.—Coarse Ware Bowls, E.N. and Later. (Scale 1/3.)

Type 2. *Open Bowls with Straight or Splayed Sides*, FIG. 4. 4, 5, 6, 19.

These also are common. Handles occur below or at the rim. Examples with rim diameters of 30 cm. or more are usual. FIG. 4. 6 has a particularly fine bright red burnish, and is of a suitable size for a large drinking vessel.

Type 3. *Carinated Bowls*, FIG. 4. 15–18, 22, 23.

These are larger coarse examples of shapes which are common in E.N. fine wares. In fabric and shapes the classes of coarse and fine ware merge imperceptibly into one another in E.N. Later the two classes are more sharply defined, and shapes such as these are not found in coarse ware in M.N. and L.N., although some continue in fine ware. Even in E.N. coarse ware carinated bowls are rare in comparison with the simpler types.

Type 4. *Carinated Bowls with Offset Rim*, FIG. 4. 20, 21.

These again are found in coarse ware only in E.N., although in finer fabrics they are fairly common in every phase.

Type 5. *Bowls with Incurved Rim*, FIG. 4. 14.

There are only two examples of this from E.N. contexts.[18] In FIG. 4. 9, 10 are shown open bowls, one with a thickened rim, which are intermediate between Types 1 and 5, and which are not as uncommon as the latter.

Type 6. *Deep Bowls or Jars Narrower at the Rim than at the Widest Diameter*, FIG. 5. 13–16.

This and other closed shapes are much rarer than the open shapes of FIG. 4. Strap handles placed vertically occur not far beneath the rim, which is often offset or clubbed as in FIG. 5. 1–7, 11.

Type 7. *Narrow-necked Jars*, FIG. 5. 8, 10, 12.

The division between this shape and Type 6 is arbitrary, the distinguishing feature being a gourd-shaped neck as opposed to a mere thickening of the rim.

Type 8. *Funnel-necked Jars*, FIG. 5. 9.

These are very much rarer in E.N. than later.

Bases are all of the simple flattened type, probably very small in comparison with the size of the vessels to which they belonged, FIG. 5. 17, 18. A few are concave, FIG. 5. 19.[19]

There is a very pleasing variety in the handles, which fall into two main classes, the ‘ wishbone ’ handle, FIG. 5*a*. and the strap handle, PLATE 29, *a*.

FIG. 5*a*. 1 shows a simple arched handle with round or oval section, situated on the rim. This type seems to belong always to very large vessels of coarse fabric. There are many examples of it in E.N. I, in a slightly burnished grey or variegated brown-grey ware, and the type continues into M.N. and L.N. on vessels with an unburnished light grey or buff surface. Similar handles occur at Phaistos.[20]

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[18] B I 10, 7th m.; D IV 1, 5th m.

[19] There appear to have been no rounded bases.

[20] *Festos*, fig. 36, bottom centre.

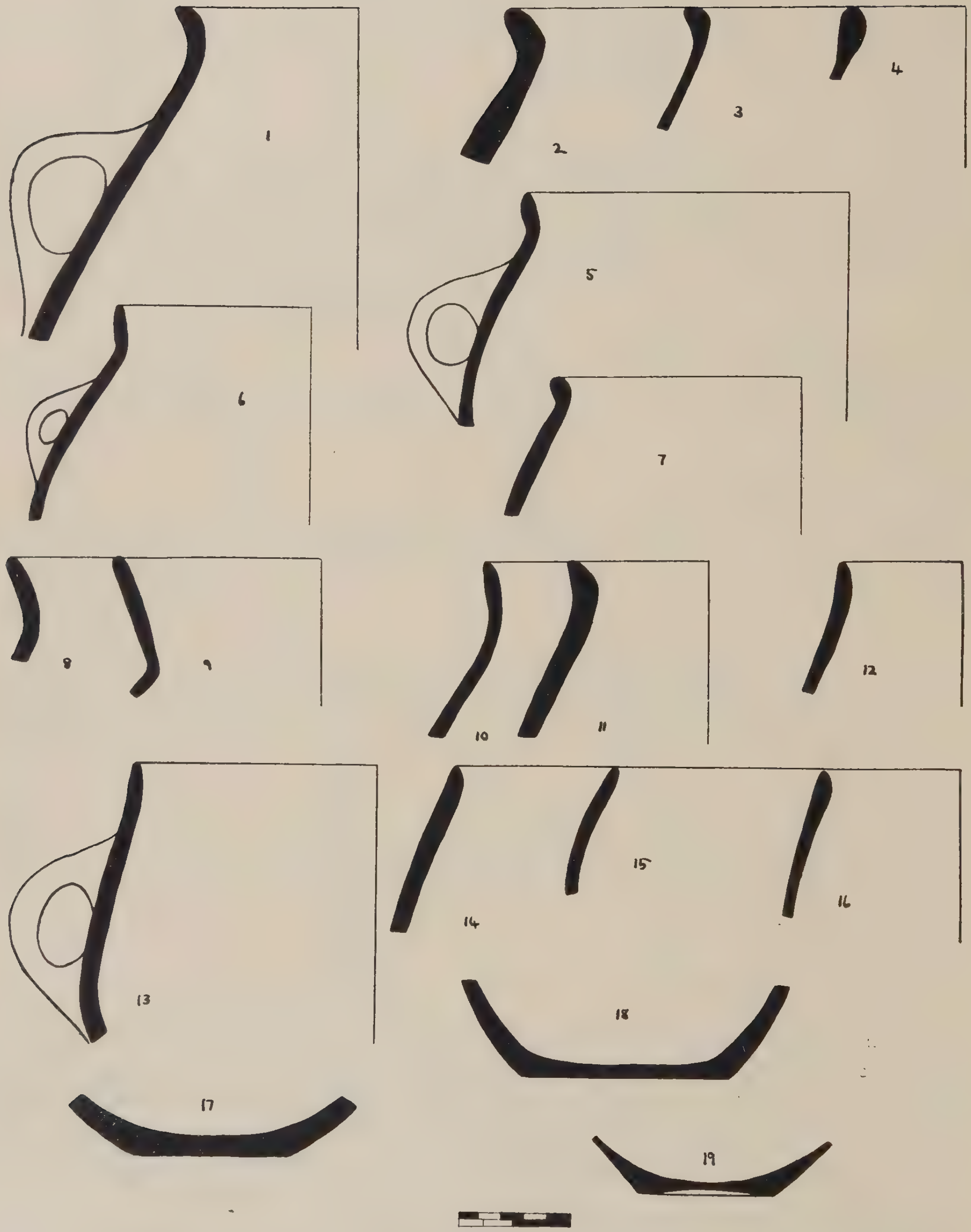
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Fig. 5.—Coarse Ware Jars and Bases, E.N. and Later. (Scale 1/3.)

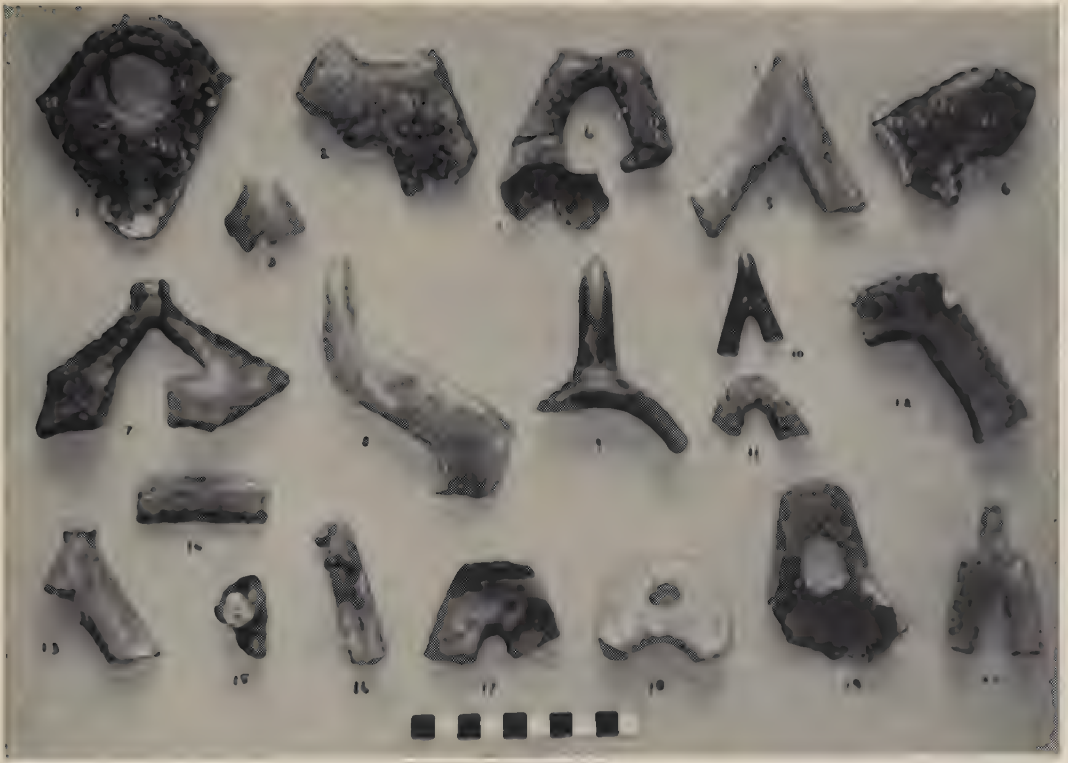

FIG. 5*a*.—WISHBONE HANDLES.

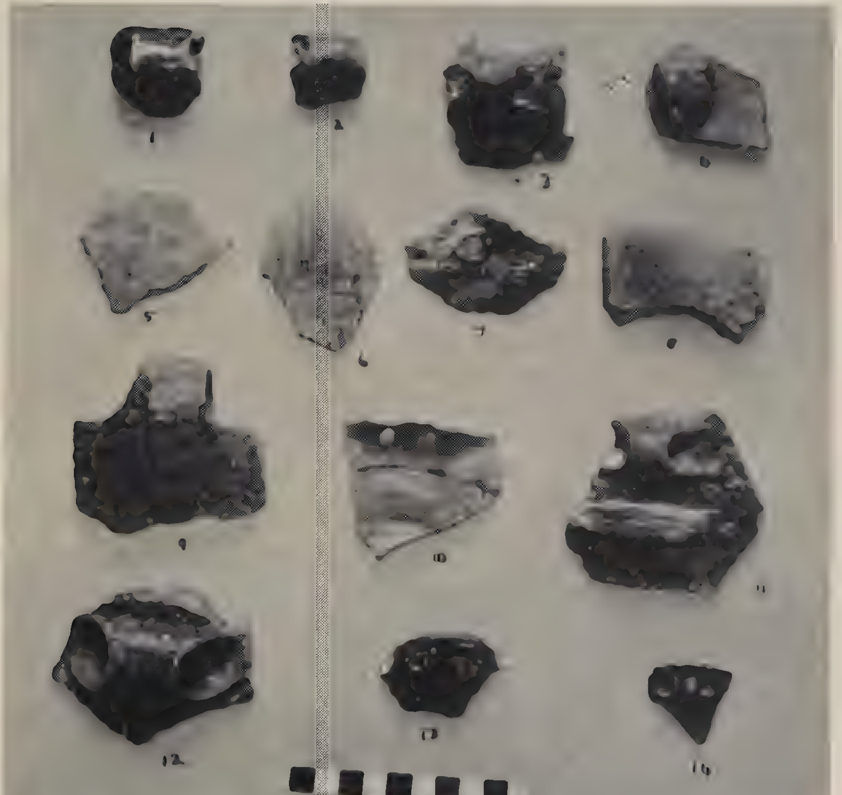

FIG. 5*b*.—STRAP HANDLES AND LUGS.

Wishbone handles are on the whole very common in E.N. but tend to become rarer later, especially as far as coarse ware is concerned. This is true even in the case of the simpler varieties like FIG. 5*a*. 5, 12, but is more noticeable in those like FIG. 5*a*. 7, 13, with knob protuberances at their apex; one type has a rectangular flat-topped knob, and another a round one; these are found almost exclusively in E.N. I., and never occur later than E.N. II. The only more specialised type which begins early and persists is FIG. 5*a*. 8, with a long horned termination.

The broad flat type with a double horn, FIG. 5*a*. 2, again is confined to E.N. I. It is rare at Knossos, and has not been found elsewhere in Crete, although there are examples of the more ordinary types at Phaistos and at Magasa in East Crete. The smaller example of the same type, FIG. 5*a*. 3, is from a mixed context [21] but in a coarse burnished E.N. fabric. FIG. 5*a*. 4 is similar, but the shafts are thinner and in section are round instead of oval. The fabric is very coarse with large white grits and the surface colour irregular through poor firing; there are four of this type from datable E.N. I contexts, and three from uncertain contexts.[22] FIG. 5*a*. 6 probably belongs to the same group whether it was like FIG. 5*a*. 1 but with a pointed apex, or like FIG. 5*a*. 19. The latter was from a mixed context,[23] but in a coarse burnished variegated ware almost certainly E.N. I.

Plastic decoration, and the plastic treatment of handles, are characteristics of this earliest period. FIG. 5*a*. 11, 17 are arched handles with the apex bent backwards underneath to make a better grip, or for decoration. They are both from the same E.N. I context [24] which yielded also FIG. 5*a*. 14, the shaft of a wishbone handle with one edge dentated. FIG. 5*a*. 15, 16, too, have downward projections at their apex; the first is from a mixed context, and the second is E.N. I.[25]

Wishbone handles, some of them horned, occur in Early Bronze Age contexts at Thermi and Troy, but are usually attached beneath, not on the rim.[26] More exact parallels occur in Macedonia and in Thessaly from the Early Bronze Age onwards,[27] but these can have no direct connection with the Knossian examples, which are as far removed from them in time as in space.

Large strap handles in coarse ware are very common at Knossos throughout every phase; three of these from E.N. I levels are illustrated in PLATE 29, *a*, 1–3. Some are slightly flanged, FIG. 9. 1, a characteristic E.N. I feature which might be put down to an accidental sagging of the clay before firing, save that in a limited number of somewhat finer sherds the same sort of treatment is obviously deliberate and decorative, FIG. 9. 2–7, 11.[28] The fabric of these last, though not of the coarsest sort, is not so good as that of most of the fine wares. White grits are often visible in the break, or even on the surface, which is usually an uneven grey or black with brown or buff patches, and well burnished.

In the same medium coarse dark burnished ware are found horizontally perforated lugs, FIG. 5*b*. 1–3. Unperforated lugs, and small skeuomorphic or token handles were refinements usually reserved for fine ware, but FIG. 5*b*. 4, and FIG. 5*c*. 6, are coarse.

All these are from E.N. I contexts, as is also the rare ‘ nose-bridge ’ handle, PLATE 29, *a*, 4.[29]

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[21] L III 13.
[22] E III 14, 2nd m., I II 9 ‘ 5th Day ’, N II 19, 1st and 2nd m., L III 13, L III 20, L IV 3, 2nd m.
[23] L III 13; illustrated also in *PM* I, fig. 7, 7.
[24] I II 9, 4th m.
[25] E III 11, S V ‘ Area of Wagers ’ (Buildings South of the Palace).
[26] *Thermi*, fig. 27, *Troy* I, pl. 245, 7, pl. 249, 1, 2.
[27] *P.Mac.*, fig. 52, fig. 71d. *P.T.*, fig. 134. *Dhimini and Sesklo*, figs. 186–196.
[28] M III 3, 4th m., N II 20, I II 9, 4th m., M III 3, 4th m., G I 5, M III 3, 4th m., N V 3 respectively.
[29] M III 3, 2nd m.; there are only five other examples of this type.

2. *Fine Burnished Ware*

This differs from the coarse ware only in its thinner walls, better levigation, and more careful burnish. Much highly burnished black or red ware might be classed as either coarse or fine, and it is not until a later period that the material falls more easily into the two separate categories. The colour is generally black, without a brown or reddish tinge, but where red, buff, or yellow pieces do occur they are bright and clear, often of a brilliant red or warm orange.[30] They are sometimes brightly variegated. Inside and outside surfaces are not necessarily the same colour, the inside being quite often darker.

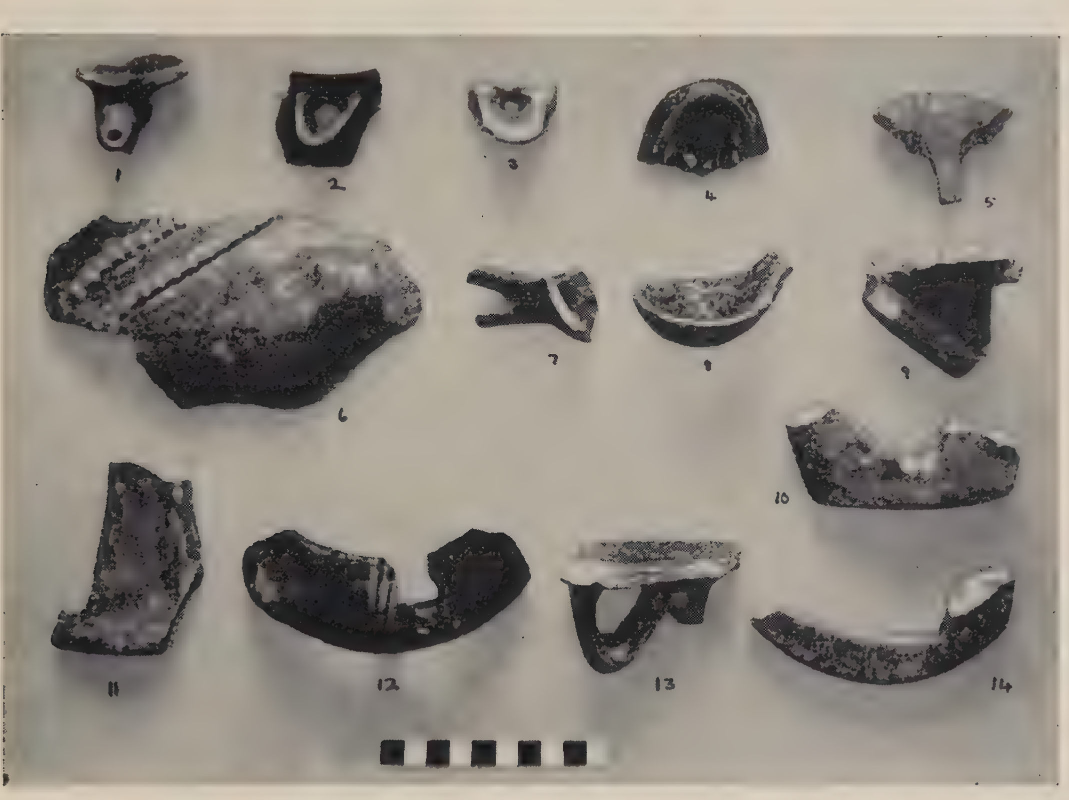

FIG. 5*c*.—SPOUTS, LADLES, HANDLES, ETC., OF VARIOUS DATES.

It is curious that where light or ' rainbow ' sherds occur, they seem to occur in quantity. This is especially noticeable in the material from the seventh, eighth, and ninth metres of Test Pit E I 5, where nearly all the sherds, coarse and fine, seem to be discoloured in some way. Much of the material is an off-white shade, hardly met at all save in this instance. In the ninth metre of Test Pit B I 10, too, there is a large number of variegated sherds. Yet elsewhere, among sherds from the same depths, and with every other appearance of similarity, no red, light, or ' rainbow ' colourings are found, *e.g.* in the seventh metre of Test Pit K II 5. Finally, there are from F I 12 two joining sherds with an abrupt change of colour along the line of the break. The best explanation, then, is that some factor such as a local conflagration might produce a red or whitish colour in sherds that had originally been dark. Whether they were all once dark, it is impossible to be sure.

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[30] Professor Childe has already drawn attention to the presence of red and light-coloured sherds from the lowest levels at Knossos, in his article ' Neolithic Black Ware in Greece and on the Danube ', *BSA* XXXVII 31.

None of the sherds is slipped, although in some cases the effect of burnishing was to cover the vessel with a hard coating of a different colour, which sometimes flakes off and has the appearance of a slip.[31]

In the earlier phases shapes are more diverse than they are later. But many types are usual from E.N. I until L.N., and these are listed here first under the same headings as for the coarse ware. Many intermediate shapes occur, and the division into types is, of course, arbitrary. The walls of some vessels are as little as 0·1 cm. or 0·2 cm. in thickness, but from their greater fragility these are nearly always so broken as to preclude reconstruction.

Type 1. *Open Bowls with Rounded Profile*, FIG. 6. 1–7.

These include hemispherical bowls, shallow bowls, and small cups, all of which are very common. Many are furnished with small ribbon handles, horizontally perforated lugs, or dummy unperforated lugs. Some rims show the stumps of wishbone handles.

Type 2. *Open Bowls with Straight or Splayed Profile*, FIG. 6. 8–18.

These again are very common. Small ribbon handles and pierced lugs occur at or below the rim, or are represented by unperforated lugs. External beading of the rim, like that on FIG. 6. 11, is a feature found from the earliest stage.

Type 3. *Carinated Bowls.* (*a*) Simple variety like FIG. 6. 19–21. (*b*) Profiled variety like FIG. 6. 34–37.

Both varieties may have small applied knobs as shown, and the second often has a handle from the rim to the carination, as shown in the incised examples, FIG. 12. 41, FIG. 13, *a*. 1.

Type 4. *Bowls with Offset Rim*, FIG. 6. 22–33, 43, 44, 47–53.

These include a number of various shapes among which it is not profitable to make further divisions. Those with smaller diameters like FIG. 6. 53 approximate to jars. FIG. 6. 38–42, 45, 46 form a separate group which is best mentioned here with the more complex types, although its rims may be plain. All these shapes may have handles ranging from the small pellet-like lug to the ribbon type.

Type 6. *Deep Narrow-mouthed Bowls* like FIG. 8. 1–6.

These and other closed shapes are always rare in comparison with the more open forms. There seems to be no difference in date between the variety with plain rim and small lug, FIG. 8. 1–4, and that with beaded rim and ribbon handle, FIG. 8. 5, 6, both being predominantly E.N. types.

Tvpe 7. *Narrow-necked Jars*, FIG. 8. 7–11, 16.

These are rare in E.N. but become increasingly common later. Examples with wider diameter approximate to bowls like FIG. 6. 41, 42.

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[31] For a detailed account of the burnishing process see Fewkes' article 'Neolithic Sites in the Moravo-Danubian Area' in *BASPR* XII 28.

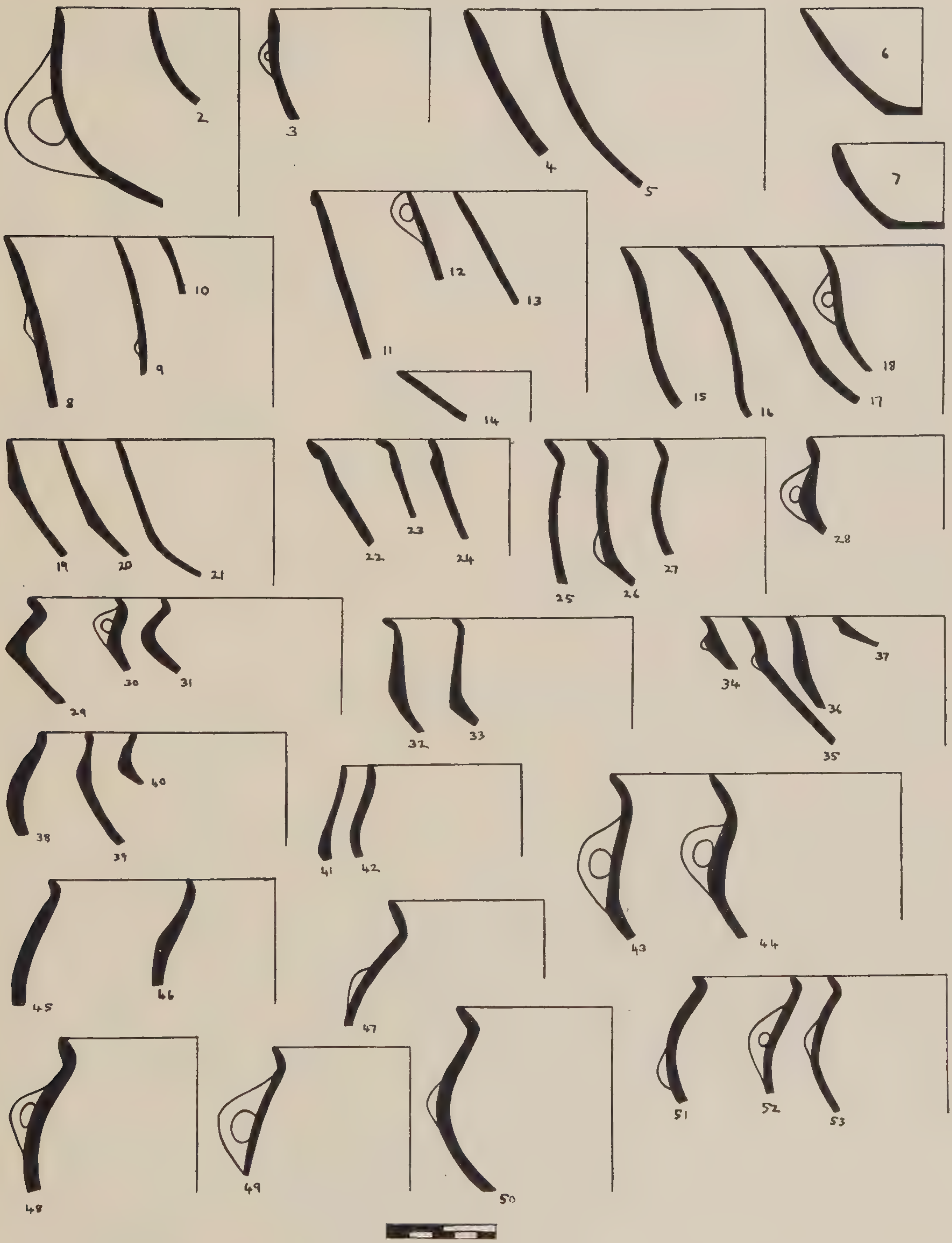
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FIG. 6.—FINE WARE BOWLS, E.N. AND LATER. (Scale 1/3.)

Bases are of the simple flattened type or concave, FIG. 8. 12–15.

Certain variations of some of these shapes seem to be more characteristic of E.N. than of later phases, FIG. 7.

Type 1a. Open Bowls with Rounded Profile and Beaded or Slightly Offset Rim, FIG. 7. 1–4.

Note the great size of some of the largest in comparison with their thin walls.

Type 3a. Carinated Bowls like FIG. 6. 19–21.

FIG. 7. 5–9 illustrates forms found repeatedly in E.N. contexts. Note again that some pieces are from very large vessels. FIG. 7. 14–16 shows the same type with a beaded rim.

Type 4a. Carinated Bowls with Offset Rim, FIG. 7. 10–13, 19–29, 34.

All these are open bowls with a markedly angular profile, and it is this type which is rarely found save in E.N. Those already shown in FIG. 6 as common in E.N. and later are very like them, but have on the whole more rounded profiles.

Type 5. Bowls with Incurved Rim, FIG. 7. 36.

The only good example of this type in fine ware is from an E.N. context.[32] FIG. 7. 30, 31 show a less open form intermediate between Types 5 and 6; these, too, are from E.N. contexts [33] and are the only examples of their kind.

Type 6. Deep Narrow-mouthed Bowls, FIG. 7. 32, 33, FIG. 8. 1–6.

This also is predominantly an E.N. type, few examples occurring later; all the pieces illustrated are from E.N. contexts.

FIG. 7. 17, 18, 35 show some of the few miniature vessels from E.N. contexts.

The most usual handles are smaller neater versions of the wishbone and strap types. FIG. 5*a*. 10, PLATE 29, *a*, 6–10 occur in E.N. contexts.[34] Dawkins, in his account of the neolithic sherds at Magasa, mentions wishbone handles from small cups or ladles; at Knossos a few may have been from ladles, but it is clear from FIG. 5*a*. that most examples can only belong to large open bowls of some sort.[35] The other handles vary in size. Some of the smaller ones are delicate ribbons which rival those on Thessalian neolithic wares. Others are merely horizontally perforated lugs.

The usual type of unperforated lug is not, save for a few exceptions, like that on FIG. 5*c*. 6,[36] large enough to serve any practical purpose as a grip, but is a skeuomorph or token of a true handle.

PLATE 29, *a*, 11 is a small and very common variety which has the holes at each side but no passage through. At other times the handle is indicated by pinching up ridges in the wall of the vessel as in PLATE 29, *a*, 12, 13, and various intermediate stages between this and the simple

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[32] E III 17, 2·20–5·70 m.

[33] E I 4, 6th m., E I 5, 7th m.

[34] FIG. 5*a*. 10 from M III 3, 1st m., PLATE 29, *a*, 6–10 all from I II 9, 4th m.

[35] It is obviously impossible to draw sections of vessels from sherds with wishbone handles, since the rising of the handle from the rim prevents the determination of the correct angle.

[36] L III 16.

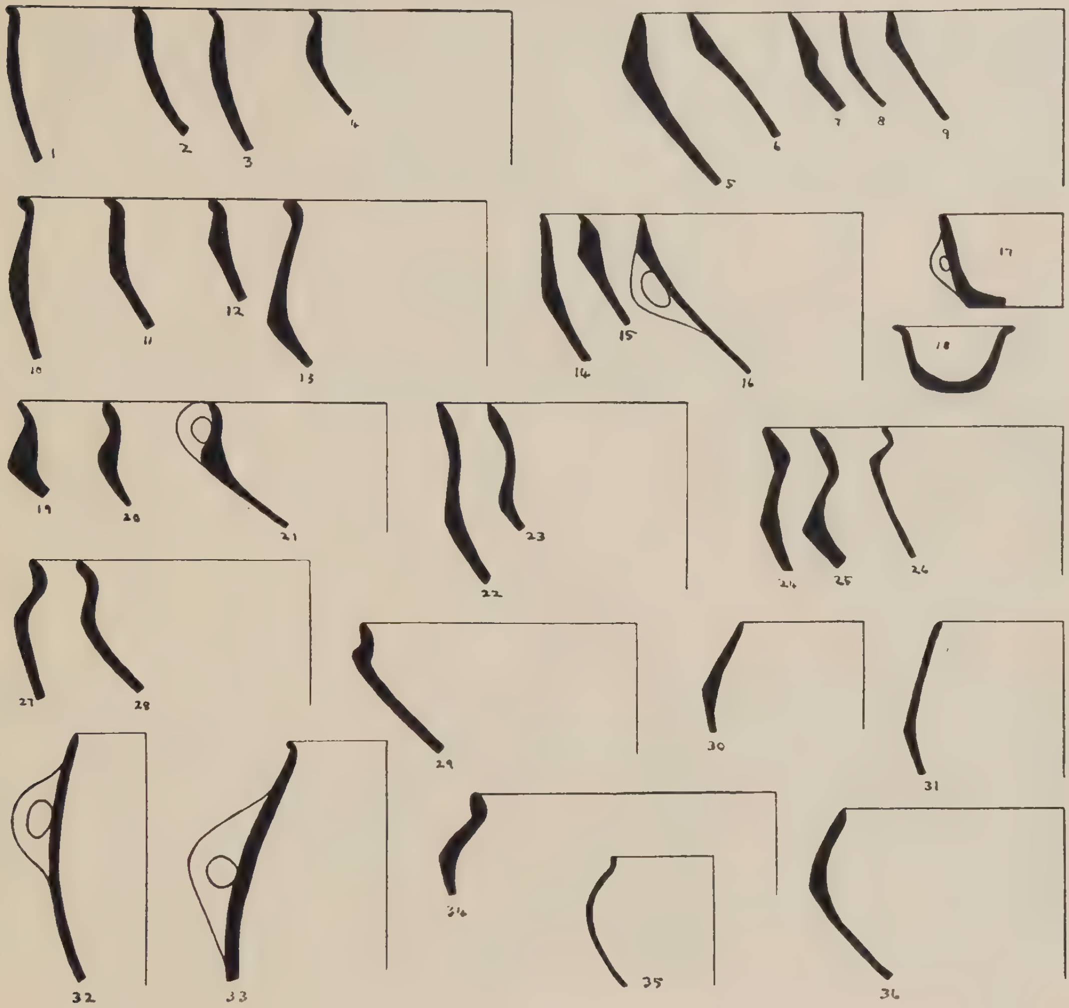
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Fig. 7.—Fine Ware Bowls and Jars, E.N. (Scale 1/3.)

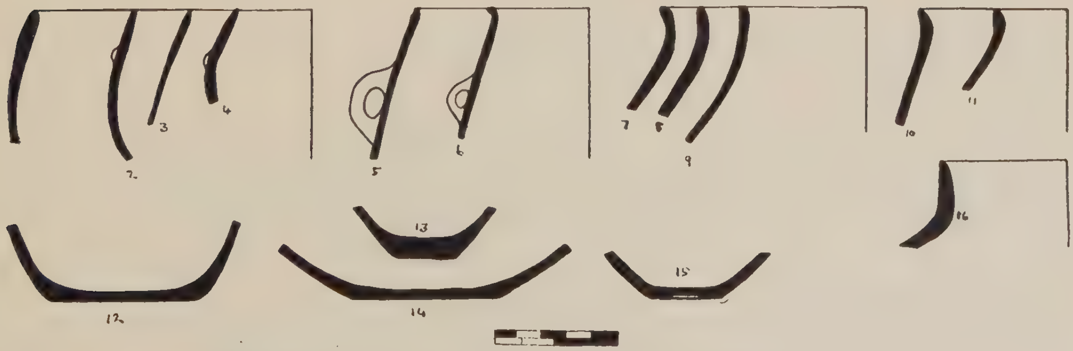
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Fig. 8.—Fine Ware Jars and Bases, E.N. and Later. (Scale 1/3.)

pellet are clear in PLATE 29, *a*, 14–17. The examples shown are all E.N. I,[37] but each type continues until the end of L.N. The single and double pellets of PLATE 31, *b*, 1, 2 are also E.N. I.[38] (Compare PLATE 29, *a*, 15 with PLATE 31, *b*, 2, which is similar but in opposite relief.) Small oval lugs like PLATE 31, *b*, 25 [39] are not unknown in E.N. I, but the round type is more usual.

Lastly, there is a quite different sort of horizontal lug, PLATE 30, *a*, 14, 22,[40] which is, with certain types of plastic ornament, confined to E.N. I (see p. 115).

3. *Ware with Plastic Decoration*, PLATE 29, *b*.

The sherds which come under this category comprise a small but important group which has not been mentioned in previous publications. Yet they have a particular interest, since, as the pottery of the later neolithic phases seems to have developed at Knossos without a break, it is to the earliest styles that one must look for evidence of origin or foreign connections.

Plastic ornament is found on sherds of the coarse or medium-coarse burnished type, coloured buff, brown, reddish, black, or grey; often white flecks are visible in the break, the burnish very poor, and the colour buff with grey or black discolorations; *i.e.*, plastic ornament occurs on the most primitive ware.

(a) *Rows of Pellets*, PLATE 29, *b*, 1–5[41] (14 examples).

All the datable examples are from E.N. I levels.

The ornament occurs immediately below the rims on sherds from large vessels. PLATE 29, *b*, 1 is from a deep bowl or jar narrowed at the neck, like FIG. 8. 16, but probably more open. The others, which are larger and coarser, seem to be from narrow-necked or funnel-necked jars or bowls, this being in spite of the fact that these shapes are rare in E.N. contexts.

The closest parallels are from the Central Anatolian chalcolithic mound at Büyük Güllücek, which has yielded burnished-ware sherds, including rims with rows of pellets arranged like ours, apparently from very similar shapes.[42] It is unlikely that certain other much less close parallels are more than coincidental; these include the neolithic knobbed wares of Thessaly and Boeotia (in which the knobs are not arranged in a zone beneath the rim) and the very coarse ' studded ' or barbotine neolithic ware of Malta. One must always be careful not to accept too superficial resemblances as significant.

(b) *Large Knobs*, PLATE 29, *b*, 10–12, 15–18, PLATE 30, *a*, 16, 20 (18 examples).

These occur singly, in threes, or in rows, and may be situated near the rim as in PLATE 29, *b*, 10, 12, PLATE 30, *a*, 16, although the majority seem to be from lower down the vessel.

(c) *Curved Mouldings Combined with Scalloped Rims*, PLATE 29, *b*, 6–8, PLATE 30, *a*, 12 (27 examples).

These occur on large open bowls and always have the same arrangement, the scallops being enclosed within the curve of the moulding. Sometimes the latter curves round to continue parallel with the rim, and broken fragments show that the complete ornament may have been U-shaped. Again, all the datable examples are from E.N. I contexts.

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[37] I II 9, 4th m., E I 4, 5th m., I II 9, 4th m., E I 5, 6th m., D IV 1, 3rd m., O I 1, 1st m., E I 5, 7th m.

[38] I II 9, ' 3rd Day ', L III 13.

[39] From a mixed M.N.–L.N. context. Illustrated also by Evans in *PM* I, fig. 7, 8 b.

[40] From E III 15, B I 3, 8th m. There are also ten other examples from E.N. I contexts.

[41] From contexts including D IV 1, 4th and 5th m., D VII 3, 6th m., E I 5, 6th m., E III 8, 7th m., I II 9 ' 6th Day ', K II 5, 7th m., N II 20, N III 1, N IV 20.

[42] *Belleten* XII, pl. XCV, fig. 29, pl. CVII, fig. 47, top.

Other scalloped rims were possibly more fragmentary pieces of the same type, PLATE 29, *b*, 9, 30, *a*, 13 (38 examples). Some project horizontally as well as vertically, PLATE 29, *b*, 13, 14, 30, *a*, 15.

(d) *Dentated Rims*, PLATE 29, *b*, 20, 30, *a*, 18 (5 examples).

(e) *Plastic Decoration in Imitation of Rope*, PLATE 29, *b*, 19, 30, *a*, 21, FIG. 5*c*. 6 (9 examples).

Examples of this vary in detail Although more common earlier they are not so much confined to E.N. I as are the other types of plastic ornament.

The applied strips on the two pieces shown on PLATE 29, *b*, 21, 30, *a*, 19 may also represent rope, although here the intention is less obvious.

(f) *Unpierced Horizontal Lugs*, like PLATE 30, *a*, 14, 22 (15 examples).

Some of these occur on the carinations of bowls like FIG. 7. 19, 22.

(g) *Miscellanea*.

PLATE 30, *a*, 10, 11 are the only neolithic pieces from the site with barbotine ornament. There are two examples of perforated rim projections like PLATE 29, *a*, 18, FIG. 9. 13. Another piece with an unusual treatment of the rim is shown in PLATE 29, *a*, 5; this and PLATE 30, *a*, 17, 24 are the only known examples of their kind.

Among these groups types (*a*) and (*c*), the rows of pellets and the scalloped rims with curved mouldings beneath, are so distinctive that close parallels elsewhere would indicate some probable real connection: the larger knobs, the dentated rims, and the rope-like mouldings are, of course, much less distinctive and their parallels in Aegean neolithic and Bronze Age contexts prevalent but unimportant.

There are in all 137 sherds decorated in these various ways. The evidence of their distribution is decisively in favour of an E.N. I date, as follows:

(1) Beneath the cutting of the 'Domestic Quarter'	20
(2) E.N. I levels of stratified Test Pits	48
(3) Other E.N. I contexts	23
(4) Undatable mixed contexts	43
(5) M.N. contexts (all like PLATE 29, *b*, 15)	3
	137

Flanged or trumpet-ended strap handles of the types shown in FIG. 9. 2–7, 9, 11, PLATE 29, *b*, 19, 20 also have an exclusively E.N. I distribution, and must be considered as belonging to this series.

4. *Incised Ware : the Pointillé Style*

Throughout the neolithic period incised ware is no different in fabric from the undecorated fine burnished wares. Save in a few very exceptional sherds of L.N. date, the patterns were always cut before firing. In many pieces they are emphasised by a white chalky filling, or, very rarely, by red.[43]

In E.N. I incision is rare. The theory that it did not exist at all in the earliest phases was once justified by the study of certain Test Pits such as B I 1, but cannot be held in the face of evidence from elsewhere (Test Pits B I 10, D VII 3, E I 5).

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[43] Cf. *PM* I 36, J. D. S. Pendlebury, *Archaeology of Crete*, 37, note 2.

A large proportion of the limited number of incised pieces known to come from E.N. I contexts are decorated in the punctuated ribbon or *pointillé* style, PLATE 30, *a*, *b*, *c*; and the stratigraphical evidence is that this type is much commoner now than later. Examples occur as follows:

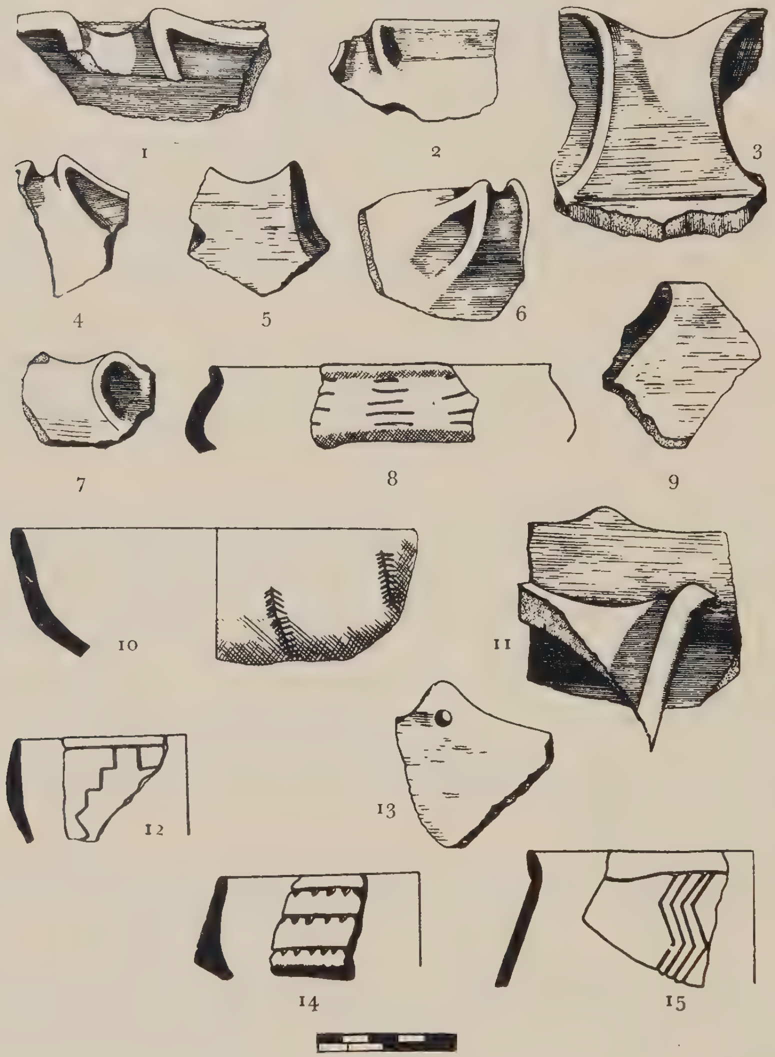

FIG. 9.—TRUMPETED HANDLES AND INCISED BOWLS, E.N.I. (Scale 1/4.)

(1) Beneath the cutting of the ' Domestic Quarter '	10
(2) E.N. I levels of stratified Test Pits	21
(3) Other E.N. contexts (not certainly E.N. I)	15
(4) Undatable mixed contexts	34

Designs include filled triangles, chevrons, chequers, and step-patterns, which are combined occasionally with simple linear motifs as in PLATE 30, *b*, 7.

Type 1. *Open Bowls with Rounded Profile*, PLATE 30, *a*, 1.

The example illustrated had some sort of handle which rose above the rim, perhaps a wishbone handle.

Type 2. *Open Bowls with Straight or Splayed Profile*, PLATE 30, *a*, 4, 6, 30, *b*, 2, 4–9, 12, 19, PLATE 30, *c*.

A form best illustrated by the straight-sided flat-based mug of PLATE 30, *c*, claims as many as three-quarters of the *pointillé* style sherds. Beaded, slightly everted rims are the rule, though plain rims are not unknown. Strap handles or horizontally perforated lugs are attached at the rim or lower on the wall.

Types 3 *and* 4. *Carinated Bowls, Bowls with Offset Rim.*

The example shown in PLATE 30, *b*, 1 has a small ribbon handle of the usual type. The handle in PLATE 30, *a*, 2 is unique, roughly triangular in section and rising to a point above the rim.

Type 6. *Deep Narrow-mouthed Bowls or Jars*, PLATE 30, *a*, 3, 9, 25, PLATE 30, *b*, 3.

Most of these have beaded rims.

PLATE 30, *a*, 7 shows *pointillé* incision on the stump of a wishbone handle.

Other styles of incised decoration on sherds from E.N. I contexts are illustrated in FIG. 9. 8, 10, 12, 14, 15, PLATE 30, *a*, 26, 30, *b*, 13–18; they need no description separate from that of E.N. II and M.N. incised wares.

Early Neolithic II

Save in the stratified pits, it is hazardous to distinguish an E.N. II collection unless there are enough sherds to justify a conclusion drawn from the absence of plastic and *pointillé* ornament. The following information therefore is based solely on the Test Pit material.

1. *Coarse Burnished Ware*

Where an E.N. II stage can be recognised the firing and levigation of the coarse wares show some improvement on those of E.N. I; variations of colour on the same surface no longer occur, and large white grits of tempering material are less often visible in the break. Highly burnished black or bright red sherds are usual, but there is already a tendency for the number of these to decrease, while the less well-burnished buff or grey wares increase proportionately. Neither here nor in E.N. II fine ware is it possible to define much change in the shapes of vessels. Plastic decoration, flanged handles, and some E.N. I types of wishbone handle no longer occur, although the simpler types like FIG. 5*a*. 5, 12, continue to be common and there are some examples of the knobbed and horned varieties.

2. *Fine Burnished Ware*

The fabric is the same as in E.N. I with the vast majority of sherds dark surfaced and the remainder buff, red, or variegated. The burnish is very good, but as yet only a very few pieces are rippled. Shapes and handles remain the same.

3. *Incised Ware*

The *pointillé* style of incised ornament has been described separately, since, as I have tried to show in the section on stratigraphy, it is most common in the lowest levels No other group of incised sherds is so separate in style or in context until L.N., when certain new techniques and designs are employed on a small number of pieces. If we exclude these the remaining large body of incised sherds, mainly of E.N. II and M.N. date, but beginning in E.N. I and extending into L.N., may conveniently be described together.

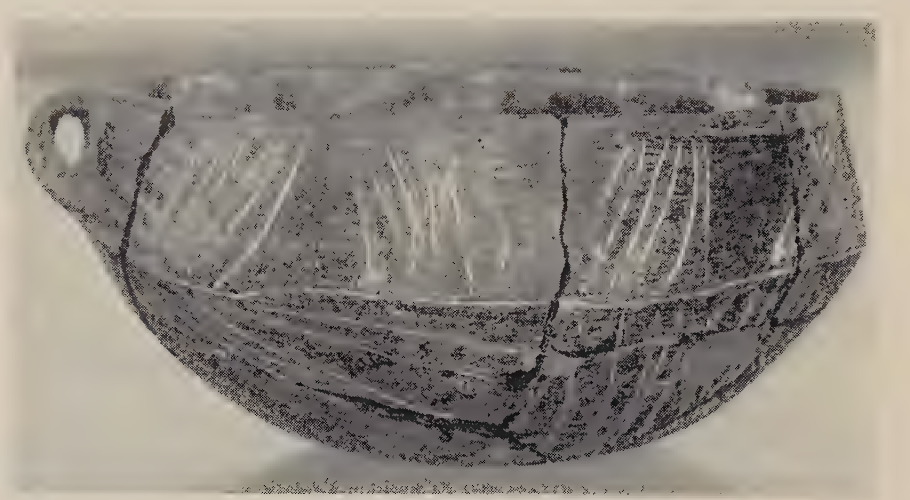

FIG. 9*a*.—INCISED BOWL IN IRAKLION MUSEUM.

The Test Pit diagrams show that whereas rippled ware begins to be common suddenly (the feature taken as the criterion of M.N. date), incised decoration, on the other hand, has its roots in E.N. I and is firmly established in E.N. II; indeed, it seems that in the period immediately before the full emergence of the rippled style, incised ware is possibly already as common as it ever subsequently became (Test Pits B I 1, E I 5).

The shapes favoured are those from the fine ware repertoire, FIGS. 6 and 8, which most readily lend themselves to the exhibition of ornament on their outside surfaces. Inside surfaces were never incised, which meant that plain wide-open bowls were rarely chosen. Nor are there any further examples of the once usual straight-sided mug like PLATE 30, *c*, save for the E.N. II base fragment PLATE 31, *a*, 16.[44] The following types therefore are the most usual.

Type 3. *Carinated Bowls*, FIG. 9. 14, FIG. 9*a*, FIG. 12. 41, FIG. 13*a*. 1, FIG. 13*b*. 8.

Type 4. *Rounded and Carinated Bowls and Jars with Offset Rim*, FIG. 9. 8, 15, FIG. 10. 1–7, FIG. 13*a*. 2–6, PLATE 30, *b*, 14, 16, 17, PLATE 31, *a*, 11, 14, 15, 17.

[44] C IV 3, 3rd m.

Examples of incised strap handles are shown in FIG. 12. 41, FIG. 13*b*. 8, PLATE 31, *a*, 1–5. The only instances where incised decoration occurs on the shafts of wishbone handles other than the *pointillé* example already quoted (PLATE 30, *a*, 7) are two examples from E.N. II contexts[45] PLATE 30, *b*, 10, 11, and a horned wishbone handle like FIG. 5*a*. 9, decorated with large dots, from a mixed context.[46]

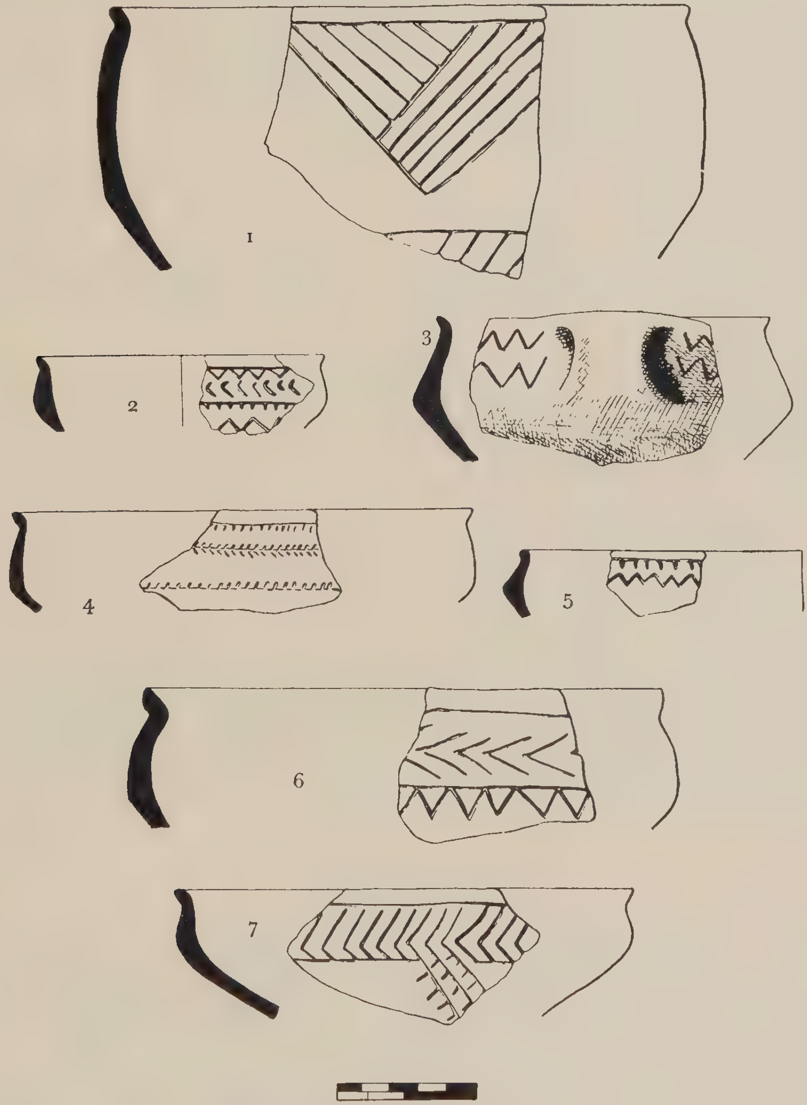

FIG. 10.—INCISED BOWLS, E.N. II. (Scale 1/4.)

The motifs are as a general rule rectilinear. Some patterns are repeated again and again, while others occur only once. The most usual groups, found at every stage and particularly common in M.N. contexts, consist of:

(a) *Long lines, joined at regular intervals by short lines or dashes, on one or both sides*, FIG. 10. 2, 4, 5, 7, FIG. 12. 41, FIG. 13*a*. 2, FIG. 13*b*. 8, PLATE 30 *b*, 10, 11, 16, PLATE 31, *a*, 2, 3, 8, 11.

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[45] E I 5, 5th m., D IV 1, 3rd m.

[46] L III 20.

This is the most common motif found on strap handles, where it is arranged vertically. Elsewhere it is usually arranged horizontally as in the above examples, but there are two notable exceptions where the lines are diagonal, FIG. 9. 10 (E.N. I) and PLATE 30, *b*, 13 (E.N. II). Evans has suggested that this motif may sometimes be the stylised representation of a plant or tree,[47] and in a few cases the lines are so irregular as to support this theory, PLATE 31, *a*, 1 (M.N.), 6 (of uncertain date).

(b) *Combinations of plain or hatched triangles, often pendent from the rim*, FIG. 10. 1, 2, 6, FIG. 13*a*. 3–5, PLATE 30, *b*, 11, 14, 16, PLATE 31, *a*, 3, 4, 14–16, PLATE 32, *a*, 3, 4, 10.

(c) *Hatched rectangles or chequers*, FIG. 13*a*. 1, 6, FIG. 13*b*. 7, 8, PLATE 31, *a*, 17.

(d) *Hatched diamonds*, FIG. 13*a*. 2, FIG. 13*b*. 9.

Simpler rectilinear patterns are decidedly rarer, and sherds on which they occur can frequently be referred to E.N. I or E.N. II.

(a) *Zigzags*, arranged singly or in parallel lines, FIG. 9. 15 (E.N. I), FIG. 10. 3, 5 (both E.N. II), FIG. 13*b*. 9 (L.N.), PLATE 30, *b*, 7 (E.N. I), 13 (E.N. II), PLATE 31, *a*, 5, 16 (both E.N. II).

(b) *Groups of short parallel lines*, FIG. 9. 8 (E.N. I).

(c) *Step patterns*, FIG. 9. 12, PLATE 30, *b*, 15 (E.N. I).

(d) *Chevrons*, FIG. 10. 2, 6, 7 (all E.N. II), PLATE 31, *a*, 9 (E.N. I).

Other designs include patterns made up of dots (not enclosed in ribbons as in the *pointillé* style) which occur in the earlier phases but become particularly common in L.N., *e.g.*, PLATE 30, *b*, 17 (E.N. I), PLATE 31, *a*, 12 (L.N.), 17 (M.N.) and several on PLATE 32, *a*, *b* (all L.N.). The only known example of a curvilinear motif is that of PLATE 30, *a*, 27 from an uncertain context. Excised designs are illustrated in FIG. 9. 14 (E.N.), PLATE 31, *a*, 16 (E.N. II) and PLATE 32, *a*, 9 (L.N.).

As was the case among certain Mesopotamian, Syrian, and Egyptian prehistoric wares, so in Crete these patterns may once have had a symbolic meaning; this is perhaps more to be suspected when they are complex and asymmetric as in PLATE 30, *b*, 7, 13, PLATE 31, *a*, 6–8, 16, which, it should be noted, are all of E.N. date. A large number of the designs, too, copy the stitching on leather vessels, and one L.N. sherd seems to represent not only the stitches but the holes at the end of them, PLATE 32, *b*, 18.[48]

Middle Neolithic

1. *Coarse Grey-buff Ware, without High Burnish*

The tendency, already observed in E.N. II, to discontinue the practice of burnishing coarse ware, becomes pronounced in M.N. Where this phase is most fully documented, in the third metre of Test Pit K II 5 in the north-eastern sector of the mound, only a quarter of the coarse sherds have any polish at all, and this is of the light ‘ scribbled ’ type, where the tool left part of the original dull surface untouched, PLATE 31, *b*, 17, 22. The black and red colours produced by thorough burnishing are therefore rarer and an indeterminate colour between grey and buff predominates. A possible explanation is that the effect of burnishing was to decrease the porosity of badly fired vessels; the surface clay is hardened by the pressure of the instrument so that a kind of outside skin is formed, sometimes called a mechanical slip;

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[47] *PM* I, fig. 9.

[48] From B II 6; cf. *Belleten* XII, pl. XCIII, fig. 25, bottom right, pl. CV, fig. 45, bottom right, pl. CVIII, fig. 48. 24, 27. Compare also *ibid.*, pl. XC, fig. 17. 202 with the pattern illustrated by Evans in *PM* I, fig. 8. 3.

perhaps, as methods of firing improved, burnishing became less necessary from a utilitarian point of view and so was abandoned for large storage vessels, whereas it was kept on the finer pots for aesthetic reasons until it was replaced by black ' glazed ' paint.

One small group of sherds, none of which is burnished, has a white or yellow-white slip, applied usually to the outside surface only.

Although often unburnished, M.N. coarse ware is normally neatly finished, smooth and without striations or marks left by ' wiping '.

Shapes are essentially much the same as before, FIGS. 4 and 5, but some once rare types become much more common, and little differences can be observed in the sections; FIG. 11 shows a selection of M.N. and L.N. types, for, although fabric altered again in L.N., there was little further change in the shapes.

Type 1. *Open Bowls with Rounded Profile*, FIG. 11. 1–4.

Although tapered rims like those of FIG. 4 continue to be common, a striking characteristic of M.N. coarse ware is the large number of squared rims, which become as common as the earlier type.

FIG. 11. 1 is a section of the largest fragment of a store-jar found in the Stratigraphical Museum. It is from a L.N. context,[49] but the fabric is M.N. in appearance. Such large store-jars, equipped with strap handles, remain the most common vessels at Knossos throughout the whole neolithic period.[50]

Type 2. *Straight-sided Open Bowls*, some with squared rims, FIG. 11. 5, 6.

Types 5 *and* 6. *Bowls with Incurved Rim, and Deep Narrow-mouthed Bowls*, FIG. 11. 7, 14–16.

These persist in coarse ware into M.N. and L.N., although they are no longer found in fine ware. They remain very rare, especially the open type with incurved rim, FIG. 11. 14. Similar large store-jars have been found at the Koumaro Cave in the Akrotiri east of Canea, and one of them is now to be seen restored in the Canea Museum. The cave material is thought to be L.N. Other smaller bowls with incurved rim are characteristic of the Early Bronze Age of Troy and Thermi, the Cyclades, Macedonia, and the Greek peninsula. But the distribution of such a feature must not be taken too seriously, as it is an obvious and easy device to prevent liquid slopping out of a large container.

Type 7. *Narrow-necked Jars*, FIG. 11. 8–13, 17, 18, 32.

This shape, rare in E.N., becomes increasingly common in M.N. and L.N. Squared rims are often found, as in the open bowls. The very narrow-necked examples are not unlike gourds in shape, and would have been admirable for carrying water, although none of them has a spout.

Type 8. *Funnel-necked Jars, Jars with Offset Rims*, FIG. 11. 19–28.

This was even more rare than the preceding type in E.N., but now becomes common, although closed vessels are never as numerous as open forms. Diameters vary exceedingly. Tapered rims are the rule.

Some sixteen pieces, mainly from M.N. contexts, have clubbed rims like FIG. 11. 29–31. Other vessels of completely uncertain shape have large out-turned horizontal rims like FIG. 11.

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[49] I II 7.

[50] *PM* II 10.

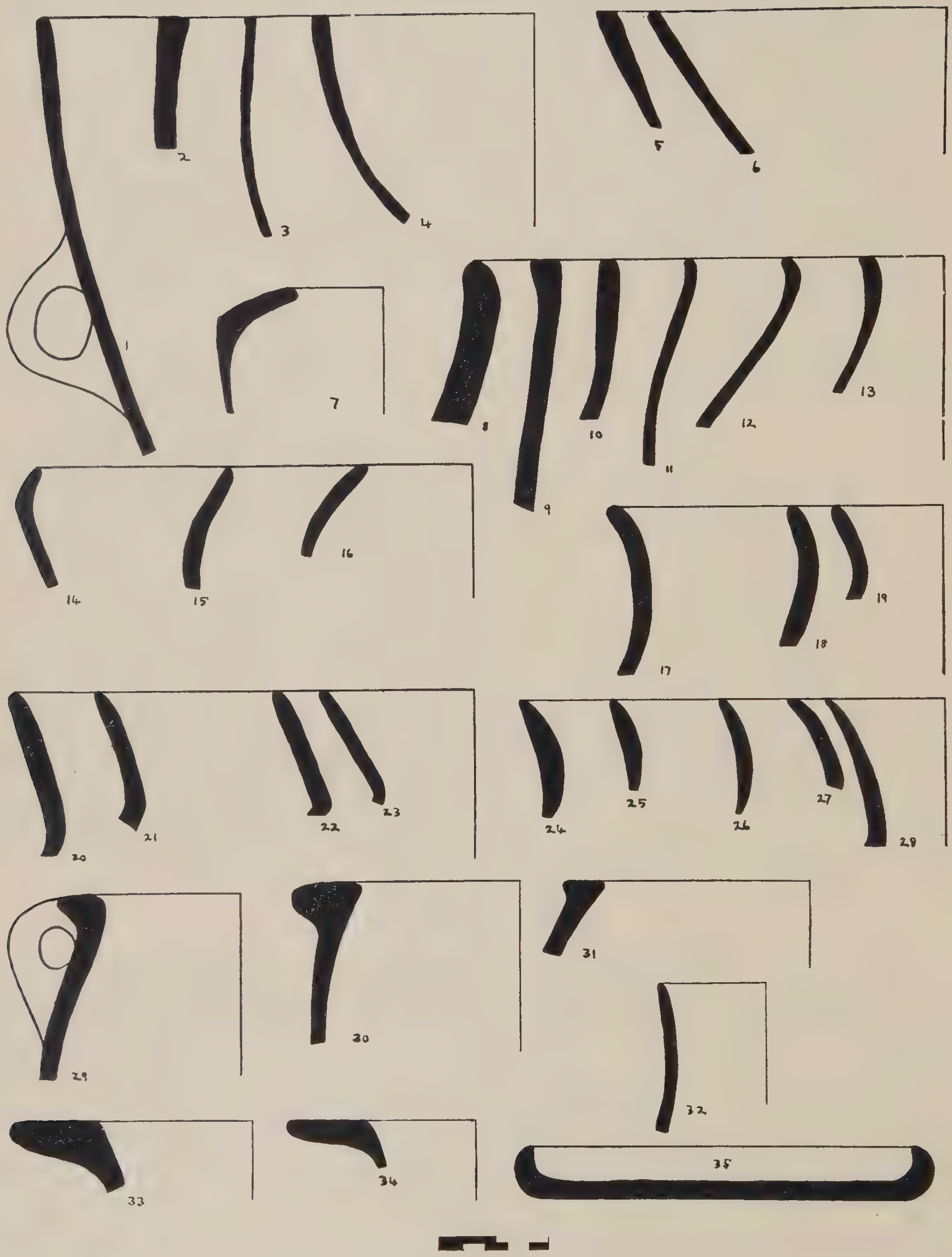
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Fig. 11.—Coarse Ware Bowls and Jars, M.N. and L.N. (Scale 1/3.)

33 and 34; these may be like the large basin fragment from Phaistos,[51] but their rim diameter is strangely small. FIG. 11. 35 is a plate, or possibly a baking platter, in very coarse variegated unburnished fabric, from an L.N. context.[52]

True wishbone handles are very rare in coarse unburnished fabrics, although in medium coarse wares, which do retain some burnish, such types as FIG. 5*a*. 5, 8, 12 persist, and a new type, FIG. 5*a*. 9 becomes very popular.[53] FIG. 5*a*. 18 is from a mixed context,[54] but the fabric is typically M.N.

The arched handle, FIG. 5*a*. 1, however, is found in completely unburnished coarse ware, and still occurs commonly as late as L.N., when wishbone handles became still rarer than in M.N.

Large coarse strap handles, no longer inclined to be flanged, outnumber every other type of handle by about ten to one.

There are several examples of a new type of lug, a rectangular, rounded or pointed projection of the rim, FIG. 5*b*. 5–8, 13.[55] (The only earlier example at all like these, FIG. 9. 13, is on fine ware.) Some call to mind the swinging rim of one of the bowls from the Koumaro Cave.[56] Nearly all the examples at Knossos are in a coarse pink, buff, or grey fabric, without burnish, or scribble-burnished. There are only two examples which are perforated, and these are also unusual in their fabric, FIG. 5*b*. 13 being dark and well burnished, and FIG. 5*b*. 7 rough and completely unsmoothed.

Another new type of handle in coarse ware is that shown in FIG. 5*b*. 9 and FIG. 12. 40, a loop on the rim. Examples come from both M.N. and L.N. contexts.[57] In some there is an aperture through, and in others not.

Finally, there is one example of a horizontal lug with two vertical perforations, FIG. 5*b*. 10,[58] in fairly coarse buff ware, with a slight burnish on the outside surface; the inside is rougher and the sherd is probably from a small, narrow-necked jar.

2. *Fine Burnished Ware, and Rippled Ware*, FIG. 12

In levigation and firing much M.N. fine ware is no different from the best of the earlier fine wares. Walls of vessels are perhaps on the whole thinner, and there is a sharper definition between fine ware and coarse ware than hitherto. Most of the shapes shown in FIGS. 6 and 8 persist without perceptible alteration, although certain varieties of them gain in popularity while others lose. The following two are very common.

Type 2. *Open Bowls with Splayed Profile*, FIG. 6. 15–18.

Type 3*b*. *Carinated Bowls*, FIG. 6. 34–37.

A few of these have unusual angular rims, FIG. 12. 21–23. A rim like 21 occurs in the Koumaro Cave material in West Crete, where it is thought to be L.N. or sub-neolithic.[59]

Very small vessels become more common, and include not only little saucers which probably had an ordinary practical use, but neatly made miniature examples of more complex shapes which were probably for votive purposes, since some, like FIG. 12. 24, are perforated

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[51] *Festos*, fig. 42.

[52] K II 4, 0–1·10 m.

[53] Compare *PM* I, fig. 7, 3, 6.

[54] E III 11.

[55] E I 4, 3rd m., E III 17, 0–2·20 m., L III 19, L IV 3, K II 4, 1·10–2·10 m.

[56] *Forschungen auf Kreta*, pl. 12, G l.

[57] Including E II 6, E III 3, K II 5, 4th m. etc.

[58] G II 5, 0–3 m. (probably mixed M.N. and L.N.).

[59] *Forschungen auf Kreta*, pl. 11, B2.

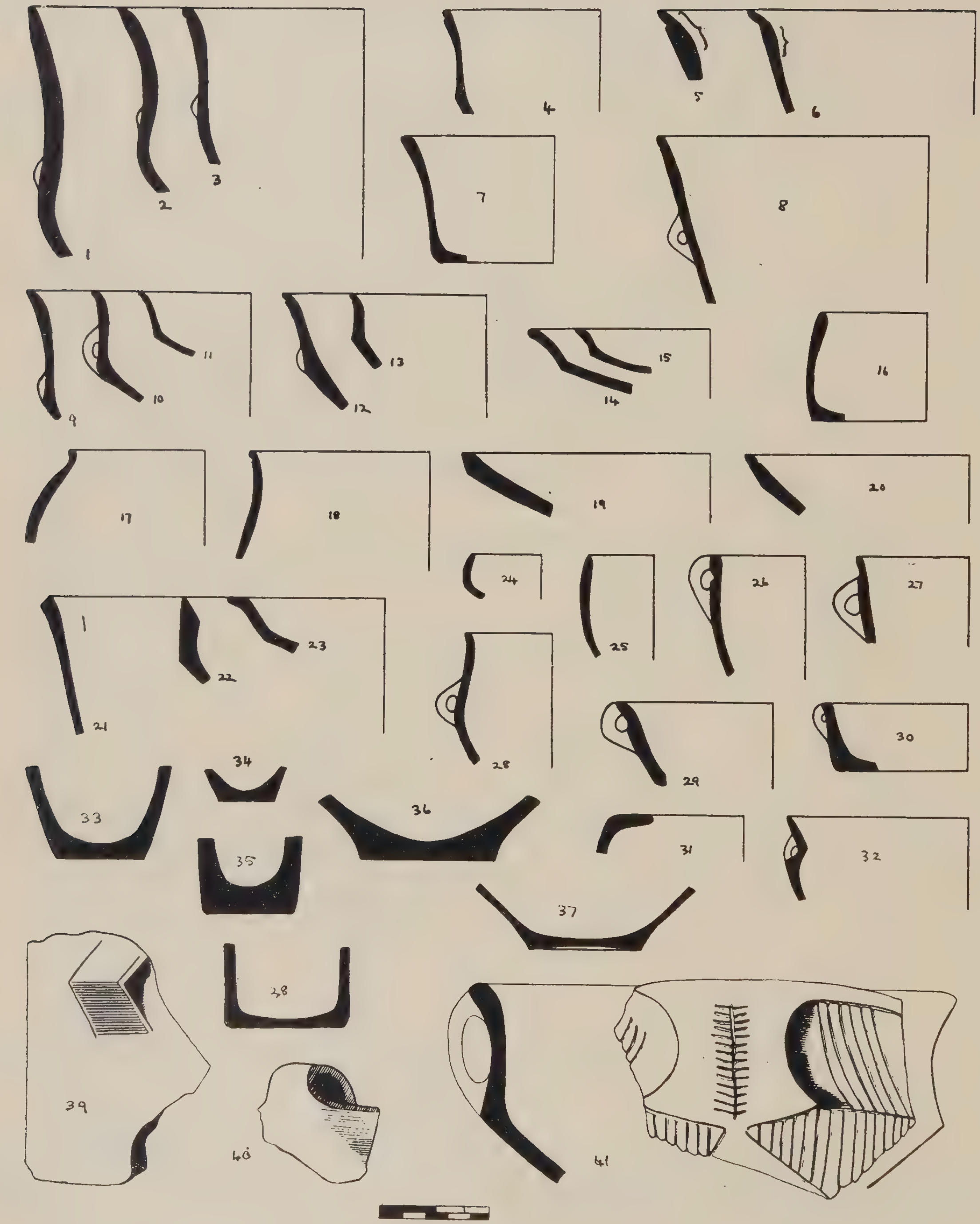
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FIG. 12.—BOWLS, BASES, MINIATURE VESSELS, ETC., M.N. (Scale 1/3.)

for suspension.[60] Others are the size of a small modern tea-cup, and may possibly have been drinking vessels. Various shapes, all of which occur in M.N. contexts, are shown in FIG. 12. 25–31.

The small carinated bowl with offset rim, FIG. 12. 32, is interesting in view of the apparent prevalence of a similar form at Phaistos.[61] A second example from Knossos, even more like the Phaistos type, was unfortunately too broken for a section.

There is no strict division between fine plain burnished ware and fine rippled ware (PLATE 31, *b*, 23, 24) the striking appearance of which is well known from previous publications; indeed, it seems that much of the unrippled material in contexts of this date is from the undecorated bases and offset rims of vessels of which the bodies were rippled. Some sherds have a slight almost imperceptible ripple. The undulating surface was effected by heavy pressure on the polishing tool, and catches the light more than surfaces burnished in the ordinary manner. The technique is obvious enough, and there is no need to assume connections between the various neolithic peoples who practised it. At Knossos the grooves are nearly always arranged in straight vertical lines, save in a few cases where they are diagonal in curved lines.

A pile of rippled sherds of M.N. date usually assumes a more homogeneous colour of brownish black than does a similar pile of E.N. date, but jet black, light brown, buff, red, yellow, and brightly variegated colours are not unknown. Rippling was employed most often on the finer vessels, that is those with walls not more than 0·5 cm. thick, but it is occasionally found on coarser pieces with walls as much as 0·8 cm. to 1·2 cm. thick; these are more often light brown or red in colour than dark.[62]

Rippled vessels are never decorated with incised patterns, although it will be noted from the sections on FIG. 12 that many of the rims which were beaded or offset in E.N., are now marked off by a single incised line just below the rim on the outside, where beading would have ended.

Types 2 *and* 3*b*. *Open Bowls with Straight or Splayed Profile and Carinated Bowls*, FIG. 12. 1–15.

One cannot draw a fast line between the splayed and carinated varieties, which are by far the most common of rippled ware forms, and claim between them ninety per cent of the examples; there are hundreds of rims which correspond closely with those illustrated, the degree of uniformity and standardisation being much greater than among the varied shapes of E.N.

Rippling normally covers the outside surface only, with perhaps a small band just inside

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[60] Cf. *PM* I 37, fig. 6. 4, 6, 7.

[61] *MA* XIX 159 ff., fig. 22.

[62] The prolific third metre of Test Pit K II 5 illustrates many of these points, and shows also the rarity of incised as against rippled ornament when both were at their height.

1. Various coarse wares with little or no burnish	1,640 sherds.
2. Fine burnished wares, black, brown, or red	396 ,,
Rippled wares	
a. Fine black or dark brown	166 ,,
b. Fine chestnut brown	109 ,,
c. Fine red, orange, yellow	18 ,,
d. Fine brightly variegated	12 ,,
e. Coarse black	24 ,,
f. Coarse brown	24 ,,
g. Coarse red	30 ,,
h. Wishbone handles	10 ,,
	393
4. Incised wares. (None of the *pointillé* style).	94 ,,

the rim. But there are some dozen exceptional pieces; FIG. 12. 5, 6 are not rippled on the outside, but have rippled bands (the width indicated by brackets) on the inside; FIG. 12. 14 is rippled on the outside and on the inside as far down as the carination; FIG. 12. 19 has only a very narrow band of rippling on the flattened top of the rim; FIG. 12. 20 is rippled on the outside as far as the carination and on the inside as far as the incised line which marks off the rim.

Type 6. *Deep Narrow-mouthed Bowl with Beaded Rim*, FIG. 12. 17.

(Alternatively, this may be classed under Type 4, *cf.* p. 111 above, FIG. 6. 45.)

Type 7. *Narrow-necked Jars*, FIG. 12. 18.

These are more common than in E.N.

Type 8. *Funnel-necked Jars.*

Although there are no examples of this shape complete enough to give sections, broken pieces show clearly that some unrippled offset rims were from jars or bowls with rippled bodies. Since the sherds were very thin at the angle of the rim to the body, it is not surprising that all of them are broken (*cf.* FIG. 14. 12–18).

FIG. 12. 16 shows one of two flat-bottomed cups which cannot be brought under the type headings.

The bases shown in FIG. 8. 12–15 continue, and the concave variety becomes commoner. Types where the angle of the side to the base is less oblique seem to occur more often than before, FIG. 12. 33, 34. A new type is introduced where the line of the wall is concave, FIG. 12. 36, 37.

There are also examples of a type, usually small in diameter, where the side of the vessel is at right angles to the base, or approximately so, FIG. 12. 35, 38. These are often without polish on the inside, and their use is hard to determine. They may be legs, but if so it is strange that no sherds illustrate the junction of such legs to larger pieces. They may be parts of votive vessels.[63] One has incised decoration of vertical lines.

Wishbone handles are rarer than in E.N., but types like FIG. 5*a*. 9, 10 are still by no means unusual and may be rippled. Ribbon handles and tubular lugs are very common; they are always left unrippled, although they often occur on the walls of rippled vessels; a new elegant waisted type is introduced FIG. 5*b*. 12, 14.[64] Small token handles like that shown on PLATE 29, *a*, 11 become five times more popular than before, and are especially common on the rippled splayed or carinated bowls which are so characteristic of this phase, FIG. 12. 1–3, 9, 10, 12. Their purely decorative value is well demonstrated by the fact that now and in L.N. they appear in vertical or diagonal rows as well as isolated examples, PLATE 31, *b*, 10–12 and FIG. 13*b*. 5.[65] (The holes have been filled with white powder for the photograph.)

Late Neolithic

1. *Coarse Ware with Striated Surface*

As has already been pointed out, the coarse ware characteristic of L.N. at Knossos is a red ‘ wiped ’ ware. It is best known from the numerous probes in the West and Central

[63] *PM* I, fig. 6, 2.

[64] Cf. *PM* I, fig. 7, 14.

[65] F II 8, L I 2, 0–1·60 m., L III 19.

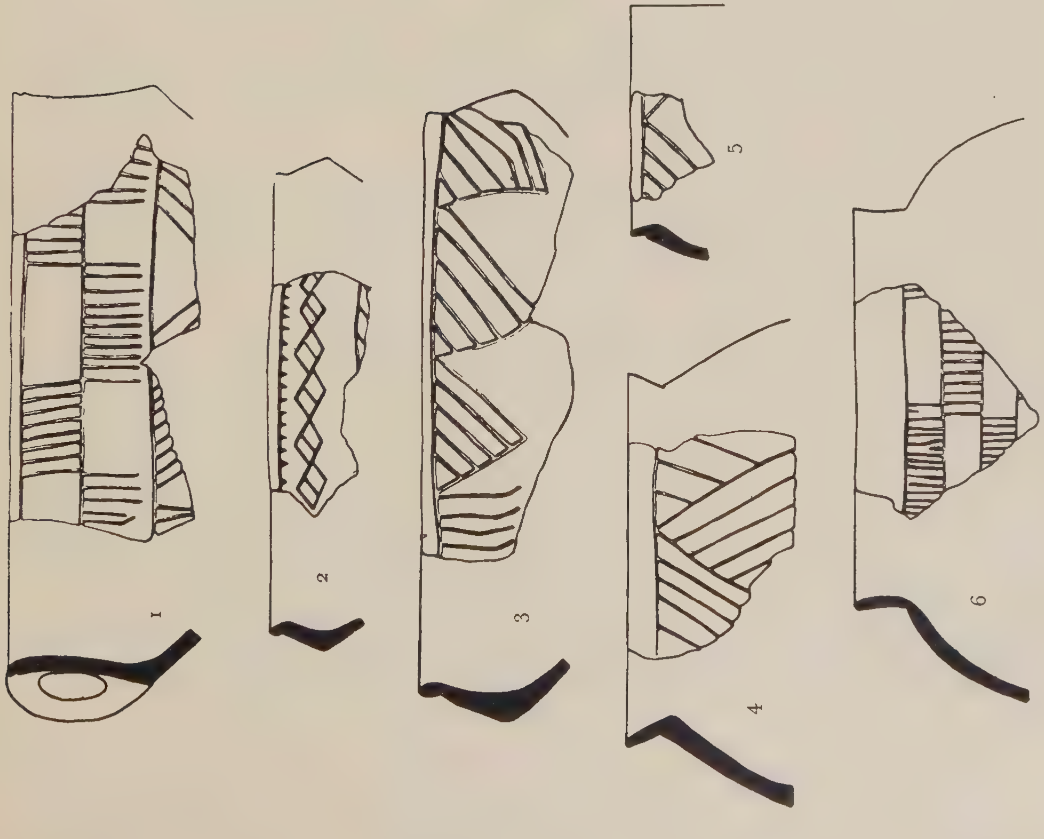
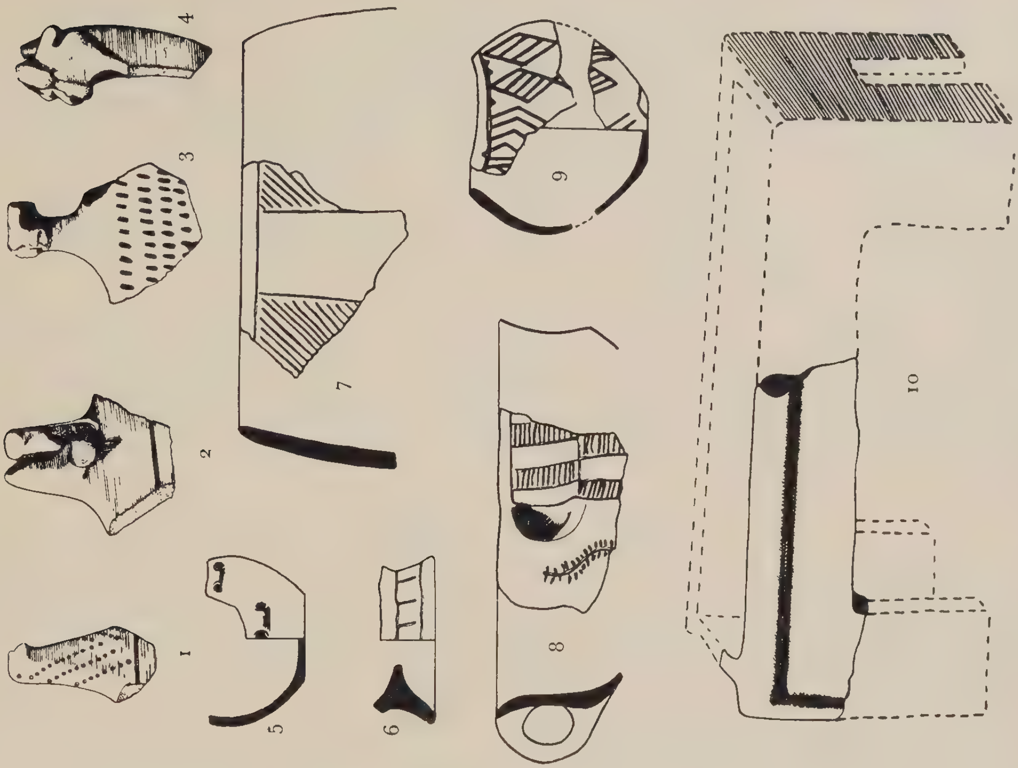


FIG. 13.—(*a*) INCISED BOWLS AND JARS, M.N. (Scale 1/2.)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(*b*) L.N. DECORATED SHERDS, AND A RECONSTRUCTION OF ONE OF THE LEGGED RECEPTACLES. (Scale 1/4.)

Courts, where there is good evidence that it antedates the first E.M fine wares, and it is found in four of the Test Pits; in the first metres of pits B I 1 and K II 5 it appears also in its other role as the normal coarse ware accompanying E.M. fine wares.

Although easily distinguishable from M.N. buff and grey smoothed wares, it represents a development from, rather than a break with, the earlier tradition. Now very few of the pieces are black or grey, firing having improved so that it is possible to bake a fabric brick red throughout its core. It is no longer necessary to finish off the surface of kitchen wares carefully, and the pots are simply wiped with a cloth or stiff brush before firing and left unsmoothed so that striations are clearly visible.

As in the earlier phases, shapes of vessels are more suitable for storage than for cooking over a fire. There are no innovations with regard to details of form. Funnel-necked jars become more common, but an open shape like FIG. 11. 1 remains by far the most usual type. Large strap handles are very common. Wishbone handles are no longer found.

The neolithic coarse ware recognised at various other sites in the island all resembles this category, and the ' sub-neolithic ' Trapeza ware of Lasithi is a special development of it.[66]

2. *Fine Burnished Ware and Rippled Ware*, FIG. 14

As has already been shown in the section on stratigraphy, rippled ware begins to decrease in quantity before the arrival of the coarse red wiped ware which is our best criterion of L.N. date, and by the time the latter is predominant there is hardly any rippling of the fine wares at all. The description of M.N. rippled wares given above applies to what few L.N. rippled pieces there are.

The remaining fine ware, similar as it is to undecorated fabrics of E.N. and M.N. date, may usually be distinguished from them. Improved technique in firing results in a biscuit burnt brick red throughout its core as in contemporary coarse ware. The effect of burnish on this reddish surface is to produce a chestnut-brown colour or a deep red or wine shade which seems to show through from beneath the burnish.[67] Some pieces are buff, orange, or light red, and many sherds have a red-flushed rim.[68] Rainbow sherds no longer occur so often. Only a very small proportion of the fine ware is left completely without burnish like the coarse ware.

Apart from the introduction of spouts, which include both the bridge spout and the teapot variety, PLATE 32, *a*, 24, 25, FIG. 5*c*. 1–3,[69] there are no startling innovations with regard to shapes. (The question of ' fruit-stands ' and raised bases is reserved for a special section.) Solid feet like PLATE 32, *a*, 26 and PLATE 32, *b*, 7 occur, but it is not clear whether these are from vessels or from animal figurines.

Much of the fabric is very fine with thinner walls than in E.N. or M.N. The convention of substituting an incised line for external beading continues. Most of the shapes shown in FIGS. 6 and 8 persist, though certain variations are more typically L.N. than others.

Type 1. *Open Bowls with Rounded Profile*, FIG. 14. 1–8.

These are finer and on the whole shallower than before. FIG. 14. 7 has internal beading of the rim, a feature which occurs three times only in L.N. contexts,[70] but which is a characteristic of E.M. ' fruit-stands ' and bowls (*cf.* FIG. 16. 1, 2). FIG. 14. 8 with external beading is from a very shallow saucer.[71]

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[66] *BSA* XXXVI 28 ff.

[67] Cf. *Troy* I 53.

[68] *BSA* XXXVII 31.

[69] I II 3, I I 9, E III 3 (3 examples); cf. *PM* II, fig. 3x.

[70] I I 13, E III 21, 1st m., B I I, 1st m.

[71] From B I 13, 2·60–3·60 m.

Types 2 *and* 3*b*. *Open Bowls with Straight or Splayed Profile, and Carinated Bowls*, as in FIG. 12. 1–4, 9–15.

These common M.N. types continue in L.N. contexts, where they are occasionally found rippled. Some have angular rims like those shown in FIG. 12. 19–23. The handled cup, FIG. 14. 19 occurs only once.[72]

Type 5. *Bowl with Incurved Rim.*

FIG. 14. 9 is the only example.[73]

Type 7. *Narrow-necked Jars*, FIG. 14. 10, 11.

These become very much more common than before. The lower part of the vessel may have been rounded, or carinated like an example from the Cave of Eileithyia, near Amnisos.[74]

Type 8. *Funnel-necked Jars*, FIG. 14. 12–18.

These also become much more common in L.N.

Miniature vessels are common as in M.N., FIG. 14. 21–23.

Bases continue to be like those of FIGS. 8 and 12, and there are two examples of a new type with a very thick wall at the angle, FIG. 14. 20.

Wishbone handles are rare, but examples like FIG. 5*a*. 10, 20, PLATE 32, *a*, 11, 14 are not unknown;[75] strap and ribbon handles of all the types found in M.N. contexts continue to be very common (PLATE 32, *a*, 2, 20, 21, PLATE 32, *b*, 2–6, 21), and two L.N. sherds have rows of such handles as a kind of ornament, FIG. 5*b*. 11, PLATE 31, *b*, 9.[76] The minute token handle of PLATE 29, *a*, 11 continues to be as common as in M.N. (PLATE 32, *a*, 7), and there is now a final degeneration where it is represented by incised dots and dashes with or without a very small pinched-up knob. These perfunctory imitations do not occur before L.N. but are now common, PLATE 31, *b*, 5, 6, PLATE 32, *a*, 8, 17, 23, PLATE 32, *b*, 14. The miniature pot decorated with two dummy handles, FIG. 13*b*. 5, PLATE 31, *b*, 10, also is from a L.N. context.[77] Some sherds are decorated with small triple knobs, PLATE 31, *b*, 3, 4.[78] The horizontally perforated oval pellet, PLATE 31, *b*, 25, is from a mixed M.N.–L.N. context.[79]

Finally, there are one or two examples of a quite different type of handle, a lug with a double vertical perforation like PLATE 32, *b*, 20[80] (*cf.* FIG. 5*b*. 10). The sherd comes from a closed shape of some sort since the inside surface is rough, and both shape and handle seem to lead on to E.M. types. There are parallels from Troy.[81]

[72] From E III 21, 1st m.

[73] From C III 1, 1st m.

[74] *PAE* 1930, 95, fig. 5.

[75] There are only three examples of the particular type shown in FIG. 5*a*. 20, PLATE 32, *a*, 14; only one, PLATE 32, *a*, 14 is from a certain L.N. context, I II 7; FIG. 5*a*. 20 (illustrated also by Evans, *PM* I, fig. 7, 1) and the third example are from mixed contexts of uncertain date.

[76] From K II 4, 0–1·10 m., F I 9.

[77] F II 8.

[78] The illustrated pieces are from mixed contexts: but of the five other examples of the type at least three are certainly L.N.

[79] See p. 114, note 39.

[80] From G II 2, 0·25–0·55 m., a mixed L.N. and E.M. context, but the fabric appears neolithic rather than E.M.; for the context of FIG. 5*b*. 10 see p. 123, note 58; there is also a third example of the type in a neolithic fabric from an uncertain context.

[81] *Troy* I, pl. 237, 30, pl. 246, 26.

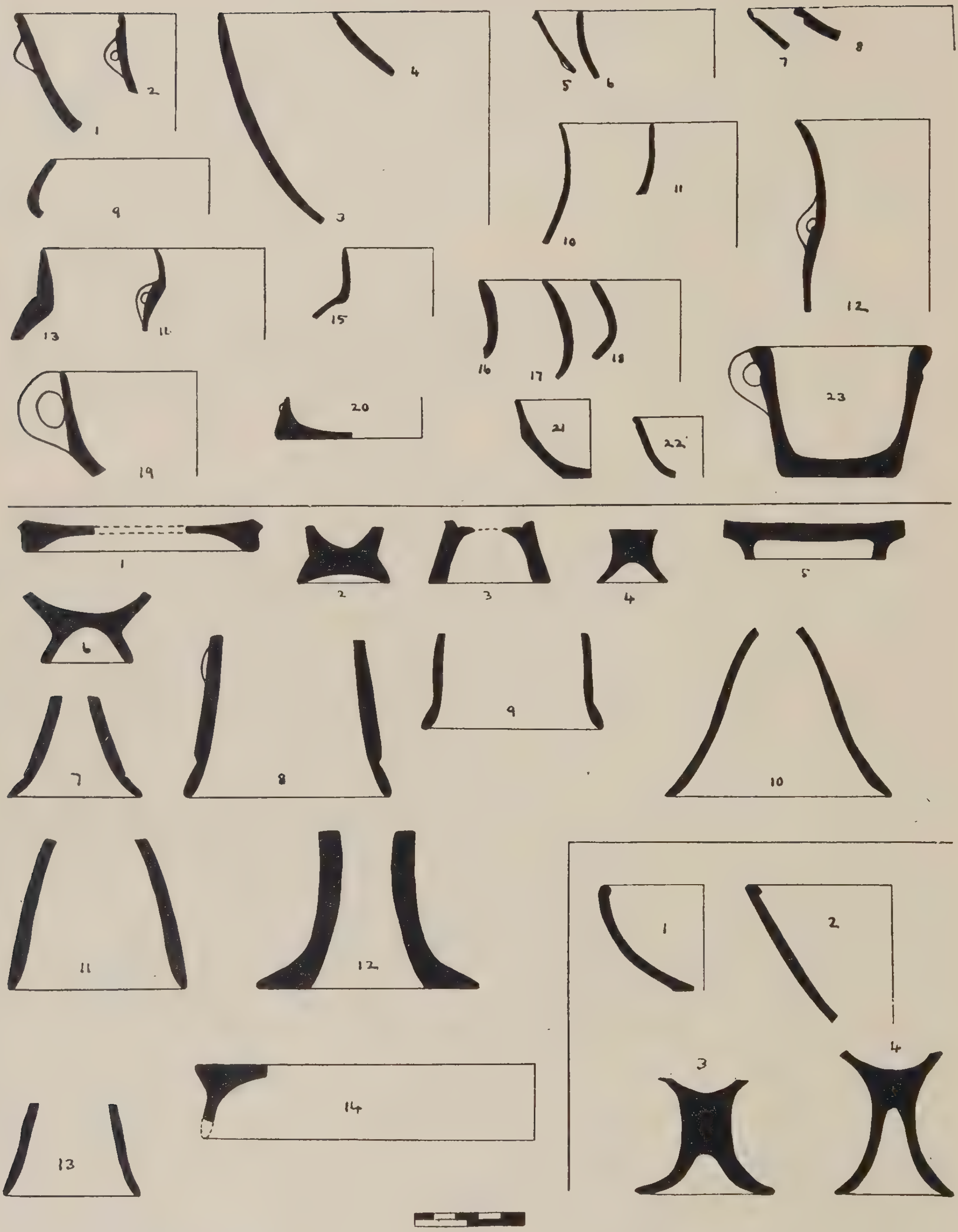
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Fig. 14.—Bowls, Jars, and Miniature Vessels, L.N. (Scale 1/3.)
Fig. 15.—Raised Bases, E.N.–L.N. (Scale 1/3.)
Fig. 16.—‘Fruit Stands’ and Bowls, E.M. (Scale 1/3.)

3. *Decorated Ware*

No less conspicuous than the decrease in the number of decorated sherds in L.N. is a change in their character which is best defined as the decline of the boldly executed, uniform incised style of M.N., accompanied by half-hearted experiments with new techniques, many of which seem unsuccessful and degenerate in comparison.

(a) *Incised Ware.*

Some pieces are indistinguishable from E.N. II and M.N. incised wares, FIG. 13*b*. 8, 9, PLATE 32, *a*, 2–4, 10. Others are decorated with painstaking, almost finicking, care, but the general effect is often mean, since the designs, usually dots or the 'plant motif' in this case, are too small, PLATE 32, *a*, 13, 19, 22, 27, 28, PLATE 32, *b*, 15. Patterns made up of dots or oval impressions in strings or panels or covering large surfaces become more common than before, PLATE 31, *a*, 12, PLATE 32, *a*, 6, 16, PLATE 32, *b*, 11, 12, 17, 19, 21; examples include strings of dots on ribbon handles.

(b) *Scratched Ware.*

A very small group of sherds has simple designs which are scratched after firing, PLATE 31, *a*, 18, PLATE 32, *a*, 18.[82]

(c) *Grooved Ware without Burnish*, PLATE 31, *b*, 18, 19, PLATE 32, *b*, 1.[83]

A rather larger group is decorated with broad, shallow grooves made before firing. The pink or grey fabric of such pieces is usually smoothed, but is often left entirely unburnished, and, since inside surfaces are sometimes even rougher, closed shapes are to be presumed. The grooves may be irregular, but often form herring-bone and chevron patterns reminiscent of pieces from Troy and Thermi.[84]

The fragment with small excised triangles (a technique well known in early Cycladic contexts) is also unburnished, PLATE 32, *a*, 9 and may best be mentioned here.[85]

(d) *Incised Ridges*, PLATE 31, *b*, 7, 8, 20, 21, PLATE 32, *a*, 12.[86]

Fifteen sherds have vertical ridges incised with a line of dots or short strokes on either side. This may well be a skeuomorphic rendering of rope or, more probably, of the seams and stitches of leather vessels. Save for PLATE 31, *b*, 20, which has only a single line of incisions, the group is markedly uniform.

(e) *Zoomorphic Lugs Attached on the Rim*, FIG. 13*b*. 1–4, PLATE 32, *a*, 1, PLATE 32, *b*, 12, 13.

The four pieces illustrated, a fifth already published by Evans,[87] and two others now in the Ashmolean Museum collection, not unlike FIG. 13*b*. 1, are the only examples of this type. FIG. 13*b*. 2–4 are from L.N. collections;[88] the contexts of the others are unknown. FIG. 13*b*. 4 seems to be the model of a woman in the same manner as the well-known figurines.[89] The others appear to be heads of animals like those known from Büyük Güllücek and from other sites in Anatolia.[90]

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[82] From D XIII, 1st m., I II 7; there are five other examples all from certain L.N. contexts.

[83] From L III 9, L III 3, (both mixed contexts), F I 3, 0–0·45 m. (L.N.); of fifteen other examples, fourteen are from L.N. contexts.

[84] *Troy* I pl. 247, 3, 6, pl. 249, 31; *Thermi* pl. IX 505, pl. XIII 565, pl. XIV 2.

[85] From I II 3, a L.N. context.

[86] PLATE 31, *b*, 8, 20 from contexts of uncertain date; PLATE 31, *b*, 7, 21, PLATE 32, *a*, 12 from L.N. contexts (C III 1, 1st m., D XVI 2, I II 5); of ten other examples, six are from L.N. and four from uncertain contexts.

[87] *PM* I, fig. 11, 2a, 2b.

[88] B II 6 (intrusive L.N. with M.M.); B I 13, 2·6–3·6 m., I II 3.

[89] *AJA* LV 121 ff.

(f) *Horizontal Corrugation*, PLATE 32, *b*, 16, 22.

There are about a dozen examples of this technique all from L.N. contexts.[91] It seems to occur only on the offset rims of fine burnished ware bowls or jars. The corrugations were made, no doubt, with the burnishing implement which was used also for ordinary rippling, but the effect resembles that of rippled pieces from Phaistos rather than anything found hitherto at Knossos.[92]

(g) *Pattern Burnish*, PLATE 31, *b*, 14–16, FIG. 5*c*. 12.

The earliest and most complete example, FIG. 5*c*. 12, is part of a bowl with offset rim and four small horizontally perforated lugs, well burnished with a reserved pattern of vertical stripes; its context is probably though not certainly E.N.,[93] and the piece therefore lies apart from the main series.

The other illustrated examples are from apparently pure L.N. contexts,[94] although the possibility that they are single E.M. intrusions cannot be altogether excluded. They are from the rims of open bowls with rounded, straight, or splayed sides. The decoration, of reserved vertical stripes in each case, is on the outside in PLATE 31, *b*, 14, 16, and inside in PLATE 31, *b*, 15. Several similar examples come from mixed L.N. and E.M. contexts, and there are more from other E.M. levels.[95] The technique is known at other sites, including Phaistos, and, notably, the E.M. cave sites of Eileithyia, Pyrgos, and Arkalokhori.[96] One E.M. sherd from Knossos has a pattern-burnished spiral like that on the complete 'fruit-stand' from the last named site, and there are in E.M. other new arrangements of horizontal and diagonal stripes and lattices burnished on reserved panels.

Miscellanea

The non-ceramic 'small finds' published by Evans, which include axes, obsidian, and bone implements, perforated shells, etc., have no need of further description, and since the present concern is with pottery only, it is not proposed to catalogue them here. Two hitherto unpublished stone objects, however, are deserving of special mention. PLATE 32, *a*, 29 shows a perforated schist amulet or polishing implement which was in a mixed L.N. and E.M. context beneath the Central Court (I II 2). PLATE 32, *b*, 9, the base fragment of a steatite vessel with grooved ornament (estimated diameter of base 3 cm.) was from Test Pit B I 13, 2·60–3·60 m., a context which is mainly neolithic but with a few E.M. and M.M. intrusions.

Clay objects, such as spindle-whorls and the important Knossian neolithic figurines, have been described in detail by Evans,[97] and more recently by Dr. S. Weinberg.[98] There are in addition to these a small number of unpublished legs and feet which are more probably broken from figurines than from vessels These include four examples like PLATE 29, *a*, 21 in black burnished fabric, all from different E.N. I contexts.[99] PLATE 29, *a*, 22, also E.N. I,[100] is from an animal figurine and has the divisions of the paw clearly shown by incisions beneath and near the foot. PLATE 30, *a*, 5,[101] again E.N. I, seems to be from an animal too. PLATE 30, *a*, 23, a piece which was unfortunately entirely unstratified, is the foot of a large human figurine and part of the flat, probably rectangular, base on which it stood. The other examples illustrated are all from L.N. contexts, PLATE 32, *a*, 26, 32, *b*, 7, 31, *a*, 10.[102] PLATE 31, *a*, 13,[103] affords a remarkably close parallel to the incised legs of female figurines from Drachmani in Phocis.[104]

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[90] *Belleten* XII, pl. XCII, fig. 22. 8. *Les fouilles de Etiyokusu* 105, fig. 96. *PZ* XXIII 112 ff., fig. 2. 14, 15, from Hanay Tepe in the Troad.

[91] Including B I 13, 2·6–3·6 m., E III 1, 1st m., K I 2, 0·20–1 m., K I 4, 1st m., K II 4, 0–1·1 m.

[92] *Festos*, fig. 36 centre, fig. 45.

[93] D IV 1 'Tunnel part of Test Pit'.

[94] L III 9, L III 5, E III 1, 1st m.

[95] *BSA* X 18 ff.

[96] *Festos*, pl. XII, top left; *PAE* 1929, 96, fig. 1. *ADelt* IV 136 ff., figs. 5, 6, 8, 10, 11, pl. B. *BSA* XIX 35 ff., fig. 3.

[97] *PM* I, 42 ff.

[98] *AJA* LV 121 ff.

[99] B I 1, 2nd m., E III 7, 5th m., M III 3, 3rd and 4th m.

[100] M III 3, 2nd m. (E.N. levels are close beneath the Palace floors in this area; see p. 100 and FIG. 1).

FIG. 5*c*. 4 shows part of what seems to be a palette with two suspension holes, in dark burnished clay; the piece is from a mixed neolithic and M.M. box,[105] but its fabric is certainly neolithic. FIG. 5*c*. 5 is reminiscent of the Thessalian 'anchor amulets'.[106] This piece, broken at all three ends, is in a grey-buff coarse fabric, recognisably neolithic, and is from a context preponderantly neolithic;[107] there is also a second similar example from an unknown context. There is no evidence as to the phase within the neolithic period to which either the palette or the 'anchors' belong.

The inexplicable object shown in PLATE 32, *b*, 10 is from a L.N. context.[108] The fabric is coarse but well-burnished buff; the two broken shafts are not unlike wishbone handles in section, but project at the wrong angles for a handle; the ledge at their base merges into the wall of the sherd towards the right.

Broken pieces from rectangular receptacles are not uncommon, and occur in contexts varying from E.N. I to L.N. It is possible to reconstruct an example of the most usual legged type with fair certainty, FIG. 13*b*. 10; in this variety rippled ornament may occur on the bevelled edges at the rim and sides. A second type has higher walls like FIG. 12. 39, and may be fitted with heavy handles set vertically or horizontally, PLATE 32, *a*, 5, FIG. 5*c*. 9, 10, 13, 14. Other boxes, some divided into compartments,[109] were without legs.

Although Evans refers to ladles as being abundant at Knossos,[110] there are in the Stratigraphical Collections only three examples, two of which are shown in FIG. 5*c*. 7, 8; one is from an apparently E.N. I context, and the others from later mixed contexts;[111] further examples are on view at the Iraklion Museum and the Ashmolean Museum. Very similar ladles were observed at Magasa, near Palaikastro.[112]

Finally, there are a number of raised bases and parts of 'fruit-stands'. There is difficulty in recognising this shape from broken sherds, since, whereas pieces like FIG. 15. 6 are clearly bases, it is not always easy to decide whether types like FIG. 15. 8, 9, 11, 13 are from bases or rims.[113] The best indications are through the burnish, which in the bases is often poor on the inside and applied in vertical strokes on the outside, while on ordinary cups it tends to be as good inside as out, and is applied so evenly that the direction of the strokes is not visible. Raised bases are not exclusively of L.N. date.[114] Examples occur as follows:

FIG. 15. 1, E.N. II.
FIG. 15. 2, E.N. I.
FIG. 15. 3, E.N.
FIG. 15. 4, uncertain date.
Like FIG. 15. 5, one E.N. I; one M.N.

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[101] S.V. 'Area of Wagers' (Buildings South of the Palace).

[102] I I 13, L III 5, C II 2, 1st m. respectively.

[103] K II 4, 1st m.

[104] *PT* fig. 142 f. *Studies* II, pl. IV 7.

[105] L IV 'General'.

[106] Cf. *PT*, fig. 140 f. *Dhimini and Sesklo*, figs. 280–282.

[107] L III 13.

[108] K II 5, 2nd m.

[109] *PM* I, fig. 6, 11 a–c.

[110] *PM* I, 37, 57.

[111] S.V. 'Area of Wagers' (Buildings South of the Palace), L IV 'General', E III 3.

[112] *BSA* XI 264 f., fig. 3c.

[113] Cf. *Forschungen auf Kreta*, pl. XI, H2.

[114] The date of the contexts of some of the examples was not studied in detail by Mackenzie, who found no raised bases in the lowest levels of the major Test Pits (*JHS* XXIII 158; see also *PM* I 58).

Like FIG. 15. 6, two E.N.; two L.N. (including FIG. 13*b*. 6); one uncertain.
Like FIG. 15. 7, two E.N.; one M.N.
FIG. 15. 8, M.N.
Like FIG. 15. 9, five M.N.; one L.N.; two uncertain.
Like FIG. 15. 10, two E.N. I; one E.N. II; one M.N.; one L.N.
Like FIG. 15. 12, one M.N.; one uncertain.
Like FIG. 15. 13, five M.N.; seven L.N.; one uncertain.
E.M. 'fruit-stands' are shown in FIG. 16. 3, 4, for comparison.

FIG. 13*b*. 11, a well-burnished red-buff fragment from an M.N. context[115] seems to be part of a large object latticed like some of the pedestalled vessels from Troy and Dhimini Culture sites.[116]

FIG. 15. 14, also from an M.N. context,[117] is a fragment from a separate vase-support.

It is not possible in the space here available to attempt to do justice to the problems of the origin and foreign relations of the Cretan neolithic culture, or to the difficult question of chronology. But there is every reason to suppose that Evans and Pendlebury may have been right in suggesting an Anatolian derivation,[118] the parallels from Büyük Güllücek already quoted being most interesting in this connection. There are also incised pieces from chalcolithic contexts at Mersin which are reminiscent of the Knossian *pointillé* style. But on the whole there is little reason to suspect a close relationship with the earliest dark burnished wares of either Cilicia or North Syria,[119] since these are without refinements such as the handles and offset rims which are so prominent at Knossos: what resemblances there are in fact may be attributed to the similar techniques and needs which obtained in different areas at different times.

A. FURNESS

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[115] L III 19; L III 18, 0·80–1·25 m., has two small fragments which may be from the same object.

[116] *Troy* I, pl. 236, 34, *PT* fig. 6, *AM* LXII, pl. 33, *Antiquity* XXVII 35 ff.

[117] K II 5, 4th m.

[118] *PM* I 14, *Archaeology of Crete* 42.

[119] This conclusion has been reached after a careful study of the relevant publications. It would be wrong, however, to omit the mention of a small group of sherds discovered at Byblos by T. E. Lawrence in 1912, which constitute a notable and entirely inexplicable exception. These pieces, now in the Ashmolean Museum, are in no way distinguishable from Knossian incised sherds of the usual E.N. II or M.N. style (*LAAA* X 39, pl. IX 2); the rest of Lawrence's collection, like that made by Sir Leonard Woolley in 1921, comprised Bronze Age sherds of the usual Syrian styles. It is to be hoped that the present excavations at Byblos may throw light on the problem.

HELLENIC HOUSES AT AMMOTOPOS IN EPIRUS

(PLATES 33–34)

DURING my travels in Epirus information reached me of a site near the village of Koumsádhes, now Ammótopos, which I visited on 5 July 1931. The village lies on that route from Arta to Ioánnina which was in vogue during Turkish times and probably during antiquity; for it is both shorter and cooler in summer than the modern road which follows the Loúros valley. Leaving Arta I walked in some three and a half hours to Koumsádhes, and thence one hour westwards to the site, which occupies a limestone spur on the western side of the valley and commands the entry into the pass leading northwards over the shoulder of Mt. Xerovoúni.[1] The view southwards from the site is shown in FIG. 1. Following the pass northwards, I reached Milianá in two and a half hours and Pénde Pigádhia in five hours. The site is of great strategic importance on this route. It also has great strength, being defended by cliffs on the east and the south and by a circuit-wall of some 1100 metres in length (see FIG. 2). The foundations show that the wall was some two metres thick, faced with rectangular limestone blocks on both sides and filled with rubble; two towers and several right-angled recesses in the wall are traceable. The wall throughout its circuit has been thoroughly and deliberately destroyed; many blocks have been shattered and others broadcast, in a manner which cannot be attributed to the conditions of weather or the passage of time on a site where other walls stand to a considerable height. There is no doubt that

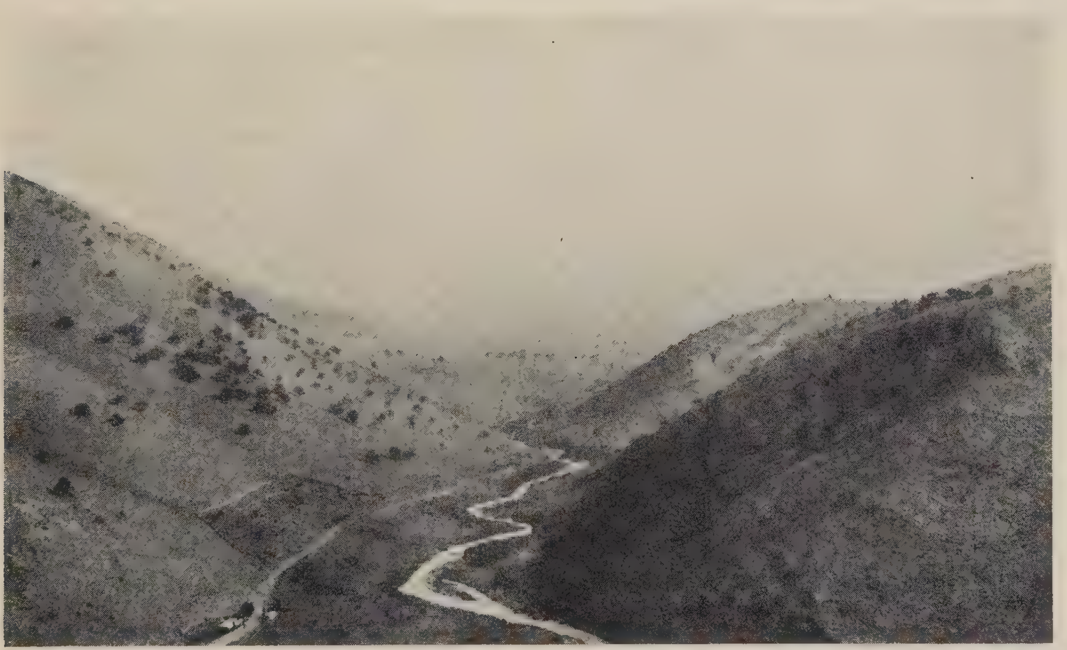

FIG. 1.—LOOKING SOUTH FROM THE SITE AT AMMÓTOPOS.

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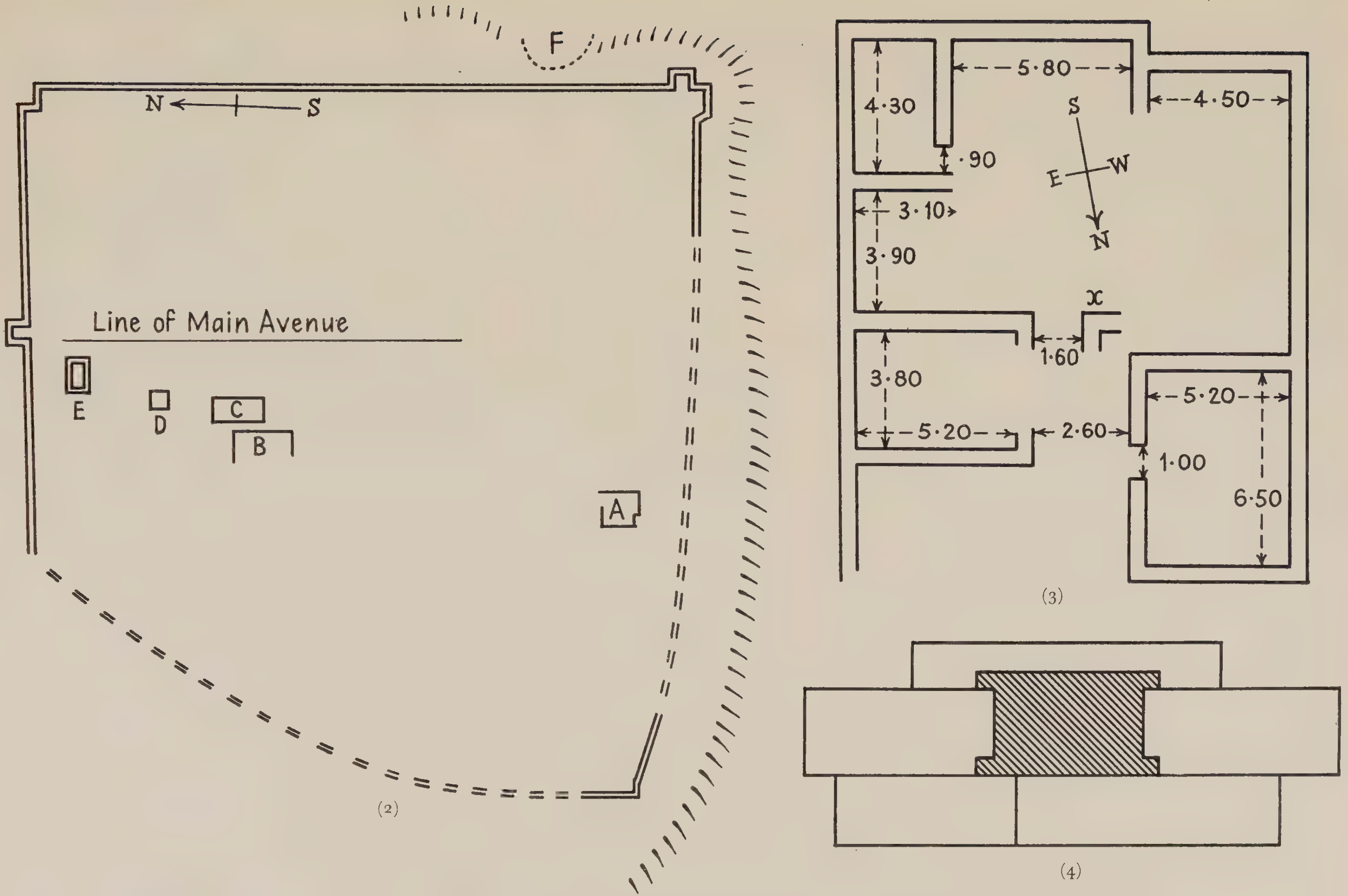
[1] On the War Office map, Greece 1/100,000 H 4 (Arta) 0405, the site is named Kastrí.

the work of destruction was carried out by the Roman legions in 167 B.C., when the fortifications of some seventy cities of Epirus were demolished: *muri deinde direptarum urbium diruti sunt* (Livy XLV 34, 6). Outside the circuit-wall the city extended towards the north, where foundations of buildings are visible; one such building measures seven metres square and was built of squared limestone blocks measuring *e.g.* 2 × 0·50 × 0·40 m. (measurements in all cases being length and height of the outer face and thickness of the block). To the east of the circuit-wall a semicircular cup facing eastwards (F in FIG. 2) seems to have been the cavea of a small theatre.

The area enclosed by the circuit-wall is almost exactly bisected by a straight avenue, which runs at right-angles from a tower in the northern side of the circuit-wall. The tower probably flanked a main entry. The ground east of the avenue is level; the ground west of the avenue slopes down gradually and, in the south-west angle, steeply. Parallel to the line of the avenue, on its western side and near its northern end, there are three houses (B, C, and D) and the foundations of another building (E); their sidewalls are parallel to the circuit-wall. Parallel to the line of the avenue, on its western side and at a considerable distance from its southern end, there is another house (A), which is some twenty-six metres distant from the southern side of the circuit-wall. It is probable therefore that the city was laid out in accordance with a regular rectangular plan. The width of a normal street is suggested by the space of some 3·50 metres which separates the outer wall of house B from that of house C.

The plan of house A is shown in FIG. 3. The photograph, reproduced in PLATE 33, *a*, was taken like the other photographs at about 4 p.m. on 5 July 1931; it shows the inner faces of the southern and western walls of the building. PLATE 33, *b* shows the outer face of the southern wall and PLATE 33, *c* the outer face of the western wall. The main walls and the partition-walls are all built of limestone blocks, precisely laid without mortar except in one part of the western wall, and are all one course thick, that is 0·50 m. The blocks, measuring *e.g.* 1·30 m. × 0·28 × 0·50, are laid in regular horizontal courses; the height of the individual courses is not uniform, and the lower courses, which are two or more in number (the foundations being covered by débris), are each almost twice as high as an upper course. The vertical joins are generally but not always perpendicular. The careful drafting of the angles of the corner-stones shows in PLATE 33, *b*; the outer face of the blocks is chiselled flat, whereas the inner face is rough-hewn.

There are some grounds for supposing that three stages occurred in the building of the south part of the house (PLATE 33, *a* and 33, *b*). In the two rooms facing south which form the south-east part of the house loopholes admit the light; in the south-west part there are windows. At the south-west angle of these two rooms the corner-stones are not laid as headers and stretchers; at the south-west angle of the south-west room they are so laid. The partition walls of these two rooms are sometimes linked to the south wall by L-shaped blocks, the long side of the L being in the south wall and the short side in the partition-wall; this is not so at the south-west angle of the house. The courses of the western part of the south wall are not in alignment with the courses of the remainder of the south wall; and the fact that the western part is recessed back from the remainder of the south wall suggests that it was built as a buttress supporting the higher eastern part of the house. The upper courses of the partition-wall between the eastern and the western parts are not in alignment with the courses of the eastern part of the south wall; but I have no note indicating whether or not they are aligned with the courses of the western part of the south wall. All these considerations suggest that the south-west room was built at a later date than the south-east part of the house. In the south-west room there are indications of still later work. A doorway once stood in


F
N
S
Line of Main Avenue
E
D
C
B
A
4·30
5·80
4·50
·90
S
E
W
N
3·10
3·90
x
1·60
3·80
5·20
2·60
5·20
1·00
6·50

(2) (3) (4)

Figs. 2–4.—(2) Site at Ammótopos. (Scale 1 cm. = 30 m.) (3) Ground Plan of House A. (4) House A. Window in West Wall. (Scale 1 mm. = 2 cm.)

the west wall below the upper-storey window (PLATE 33, *c*); this doorway has been walled-up without maintaining the alignment of the courses. One large block which has a curving edge may have been a corbel stone taken from an archway elsewhere. To the north of the doorway the wall has been relaid with the insertion of mortar (PLATE 33, *c*).

The ground-plan cannot be completed without excavation. The overall dimensions which are reduced to scale in FIG. 3 are accurate within a metre, and the orientation of the axis is 170° magnetic. Precise measurements are entered on FIG. 3, wherever I took them at the time. The doorways opening into the south-east room and the north-west room respectively are 0·90 m. and 1 m. wide. The entrance into the house as it now stands must have been in the north side, which has collapsed. From the entrance one followed the passage, which has a width of 2·60 m. between the two northern rooms but narrows to 1·60 m. as one approaches the centre of the house. Here the large blocks marked *x* in FIG. 3 are probably the stairbase, from which the staircase rose northwards alongside the east wall of the north-west room. Any conclusions concerning the full ground-plan of the house must remain conjectural until some of the débris has been cleared. But it seems likely that the main room ran east by west through the centre of the house and extended to the door, which once opened through the west wall into the street but was later blocked up. Such a room, known as the *pastas*, is characteristic of large houses, for instance at Olynthus, Pella, and Delos.[2] In other respects this house is entirely different from them. Whereas they open normally to the south and contain a courtyard in the southern part from which there is direct entry into the *pastas*, this house opens to the north. Its courtyard (if any) may have lain in the northern part; alternatively, it may have occupied the central part of the area where I have suggested that the main room lay. Some such differences are perhaps to be expected in view of the heavy rainfall, brought mainly by southerly winds, which is characteristic of Epirus.

The upper storey of house A doubtless corresponded in plan to the ground floor, as the partition-walls are so strongly built. Thus the staircase may be presumed to have led to the entry of an upper room directly above the present north-west room. The floor-joists of the upper rooms were set in sockets cut into the side-walls at regular intervals; the sockets measure *e.g.* 0·12 × 0·22 × 0·20 (deep) and are cut in the longer side-walls of the room. Such sockets were noted by me in the west wall of the south-west room and in the west wall of the central room in the south part of the house. I have no note of sockets elsewhere; but this does not mean that there are none. If the ground-floor of the south-west room corresponded to the ground-level outside, the height of the ground-floor room was about 3·50 m. up to but not including the floor-joists; the height of the upper room above the floor-joists was about 2·60 m., measuring to the top of the extant wall (PLATE 33, *a* and 33, *c*). The sills of the windows in the ground-floor room were set about 2·50 m. above the floor, and in the upper room about 1·20 m.; thus the ground-floor windows ensured privacy, whereas the upper windows gave an outlook into the street. The height of the ground-floor room in the centre of the south side is uncertain. If the lower courses of the wall consisted of four large courses (of which two are visible in PLATE 33, *a* and 33, *b*), then the room-height was some 2·80 m. up to the floor-joists. The upper room above it was some 2·75 m. high measuring to the top of the extant wall. The loopholes (or slit-windows) are cut in the second course and in the fourth course of masonry above the joists; the bottom and the top of the loopholes are thus approximately 0·30 to 0·60 and 0·80 to 1·10 m. high above the floor. In the upper room two sockets are cut at the extreme eastern end of the south wall (PLATE 33, *a*); these sockets are about 0·60 m. above the level of the floor, and may have been cut for the upper end of a ladder (*klimax*), which gave admission to the upper storey from the ground-floor in the south part of the house. The dimensions of the ground-floor window in the south-west room are 0·35 × 0·50 m. on the outer face (FIG. 4); the sill and the sides of each are cut obliquely in the stone to admit more light. The upper-storey windows are larger than the windows of the ground-floor. Both upper and lower windows were probably closed by wooden shutters, as they are today in the villages of Epirus; the upper windows seem to have had a timber frame, to receive which the outer side of the casement was recessed (PLATE 33, *b* and 33, *c*). The windows are symmetrically placed, and they are situated at the same height in the west and in the south walls of the south-west room. The loopholes in the central room and in the east room of the south side are cut obliquely in the thickness of the wall to admit more light; they, too, are in symmetrical positions. The south wall stands today to a height of sixteen courses, that is approximately five metres, and the west wall to a height of twenty-two courses, that is approximately 6·40 metres. As the top course of the south wall is continuous for the extent of the south-east room and the central room, and as the headroom for the upper storey is 2·75 metres, it may well be that this wall as it stands today is original and unaltered. In my notes there is no record of tile-fragments. It is, of course, possible that, when the city was sacked, the tiles and the timbers were removed as booty. But the massive strength of the partition-walls suggests that they supported a flat roof, made probably of timber, wattle, and hard clay. A closer inspection of the house may enable one to decide how the roof was constructed.

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[2] D. M. Robinson, *Excavations at Olynthus* VIII 142 f.

Houses built of stone have been excavated at Priene and at Delos, but the masonry of our house is technically superior. The acropolis walls at Priene, which date from the late fourth century B.C., have some points in common with the earlier part of our house. The corner-stones are similarly drafted, and the regular courses are laid with the same close joins.[3] At Delos ground-floor windows are of the same shape and are set at the same height above the floor as in the south-west room of our house.[4] These windows are characteristic of the Delian houses which date mostly to the second century B.C.; the excavators did not exclude the possibility that they were closed with shutters.[5] At Delos only one loophole similar to those in the earlier part of our house was recorded by the excavators.[6] It is then possible that the main part of our house was built in the late fourth or early third century B.C., and that the south-west room was added in the late third or early second century B.C.

House B is larger than house A; its foundations measure some 28 m. × 17 m. In the north-east angle, which stands to a height of thirteen courses, there are no sockets for joists. The photograph, shown in PLATE 34, *a*, was taken from the south-west angle of the house. A street some 3·50 m. wide separates house B from its parallel neighbour, house C, which measures some 30 m. × 16·50 m. The west wall of house C, standing to a height of thirteen courses, contains three windows giving on to the street and set high in the room; only one course of masonry separated the window from the floor-joists. The windows are similar to those in the south-west room of house A; but the sills are not cut obliquely to slope downwards into the room. The sockets for the joists do not run the whole length of the west wall. They are cut in the lower part of one course of masonry, they vary in size, and at the south end they come to a finish with three sockets of a different shape. House D measures only some 11 m. × 8 m. (PLATE 34, *b*). Its masonry is even more beautifully finished than that of house A. On its north face small knobs have been left on the centre of some of the blocks; these knobs may imitate lifting-knobs, but they are themselves not functional but decorative.

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[3] *Priene* 39 f.

[4] Délos VIII 287 fig. 158 (*La Maison de la Colline*).

[5] *Ibid.* 303.

[6] *Ibid.* 288 n. 1 (*La Maison de Dionysos*).

At the north-west angle of the house the blocks are laid as headers and stretchers (as in the later part of house A); the four lowest headers protrude from the wall, casting shadows in PLATE 34, *b*, and may have been bonded into a lower wall running northwards which is no longer extant. The three windows in the north side are symmetrically spaced, and their sills are some 3·10 m. above the present ground-level outside. Both sills and sides are cut obliquely to admit more light. The sockets on the inner side of the north wall (PLATE 34, *c*) are cut mainly in the upper part of the course of masonry and are regular in size; the floor-joists stood some four metres above the present ground-level outside. Only four courses of masonry are standing above the level of the floor-joists. Therefore the original building was considerably higher than its present height of twelve courses, totalling some 5·30 m. The house is entered by a doorway 1·50 m. wide in the centre of the east wall. As one approached the house from the east, one saw the ornamental course of large blocks, which is set on either side of this doorway and carried round the curving corners (N.E. and S.E.). These large blocks measure 1 × 0·90 × 0·50 m. The use of similar large blocks occurs at Priene in a house of the early second century B.C.,[7] where the ornamental wall adjoins the stairway. The foundations of building E show in the foreground of PLATE 34, *b*. The outer walls measure some 19 m. × 12 m.; the interval between the outer walls and the inner walls is about 1·50 m. The well-cut limestone blocks measure *e.g.* 1·40 × 0·20 × 0·70 m. Of the inner wall seven courses are visible to a height (or rather depth, the courses being below the present ground level) of 2·30 m. It seems probable that house D and building E belong to a complex of sacred or public buildings situated close to the entry into the city.

These are the most conspicuous buildings on the site; the walls and the foundations of many others are visible. It so happened that on the occasion of my visit to the site I was not carrying my surveying equipment, and I could spend only one and a half hours on the spot before walking on to Milianá. These notes and photographs may serve as a preliminary introduction to this hitherto unvisited site. The survival of the buildings, which I have described, is doubtless due to the sack of the city by the Roman legions, to the barrenness of the limestone spur, and to the lack of water; its modern counterpart, Ammótopos, is so far away that the villagers have never been tempted to remove the ancient blocks.[8]

N. G. L. HAMMOND

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[7] *Priene* 302 fig. 320.

[8] During the preparation of this paper Mr. R. Meiggs and Professor D. S. Robertson gave me the benefit of their assistance, for which I am most grateful.

THE CHURCHES OF MOLYVDOSKEPASTOS

(PLATE 35)

The village of Molyvdoskepastos stands on the north-eastern slopes of Mount Nemerçka (Merope) on the present Greek–Albanian frontier, above the valley where the Voiussa river is joined by the tributary of Sarandaporos, in the district of Pogoniani. The 19th-century travellers in Epirus and Albania seem to have passed it by as unworthy of their attentions, although the Rev. Thomas Smart Hughes (writing in 1820) remarks not only on the number of its churches ‘ which appear to have been ruined and deserted for some centuries ’, but also on the unparalleled incivility of its inhabitants.[1] The character and hospitality of the villagers, despite their recent privations, appears to have improved in proportion to the steady deterioration of their homes and their ancient monuments.

The village was formerly called Dipalitsa, but its present name is derived from the monastery of the Dormition of the Virgin, situated in the valley below close by a small tributary of the Voiussa river, and it was through the influence of this monastery that the village attained its importance as the seat of the archbishopric of Pogoniani. The foundation of the monastery and the establishment of the archbishopric are associated with the name of the Emperor Constantine IV Pogonatos (A.D. 668–85), and the tradition is borne out by documentary evidence which may or may not have been invented to supplement the deficiencies of the historians. The name Pogoniani, if a Slav derivation be discounted, is easily linked with the title Pogonatos: and it is supposed that the Emperor stayed in the district when returning by an overland route to Constantinople after his defeat of the usurper Mizizios in Sicily in 668. Above the village of Melissópetra, across the river from Molyvdoskepastos, are ruins of a building locally believed to have been Constantine’s summer residence: and the tradition of his associations with Epirus appears also in an inscription in the monastery of Voutza near Greveniti (above Metsovo), which he is said to have founded.[2] Whatever the validity of these traditions the name of Pogoniani does not figure on the diocesan lists of the Greek Church until the 14th century, and the claims of Molyvdoskepastos to any greater antiquity rest on the architectural evidence of its churches.

The monastery of the Dormition is now deserted and suffering considerably from neglect. On 9 July 1943 it was shelled and partially destroyed by German troops. The refectory and monastic cells were burnt and the church looted of its remaining treasures, and all that survives intact is the church itself and the high walls surrounding the monastery, which are probably of 16th-century construction. Of the original 7th-century building (if such existed) there is now no trace. As it stands today the church is made up of two distinct parts—to the east a small cruciform construction with a tall slender dome, joined on the west by a long nave which bears a high transverse arch (FIG. 1, *a* and *b*). Each of these forms of construction has several parallels in Epirus and Macedonia.

The cruciform section is of the triconchal plan familiar in the later and larger churches of Athos and elsewhere, being in effect square in shape with semi-circular bays on three of its sides, that to the east being extended to terminate in a five-sided apse with a small two-

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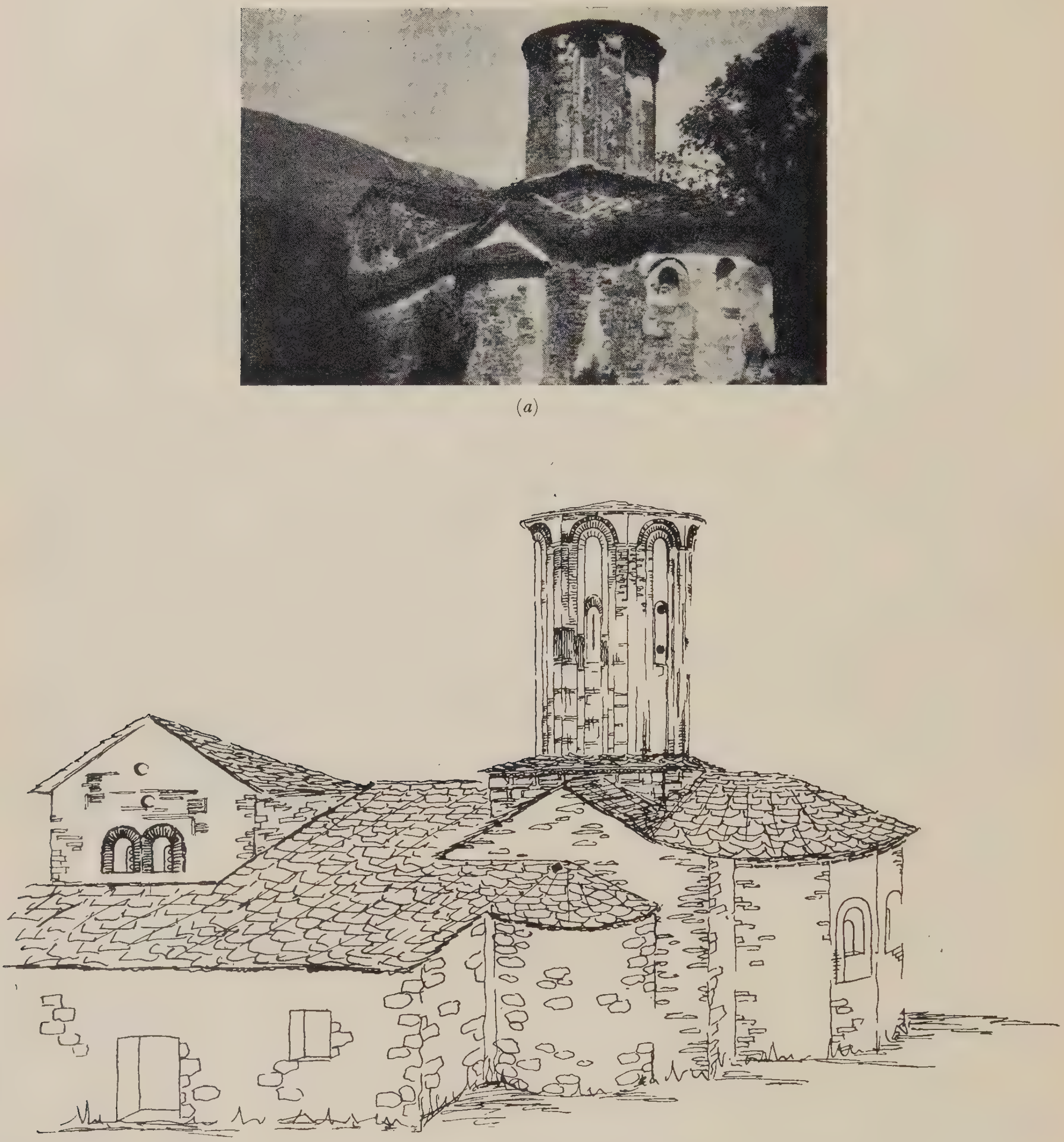
[1] Smart Hughes, *Travels in Sicily, Greece and Albania* (London, 1820), II 277–8. The writer confuses Dipalitsa with the neighbouring village of Ostanitsa.

[2] *Cf.* 'Ηπειρωτικὰ Χρονικὰ IV (1929), 18. It may be noted in this connexion that the Byzantine historians speak only of a naval expedition against Sicily. *Cf.* Theophanes (ed. *Boor*) I, 352; George Hamartolos, *Chronicon* (ed. *Muralt*), 604–5.



(a)

(b)

FIG. 1.—MONASTERY CHURCH OF THE DORMITION OF THE VIRGIN, MOLYVDOSKEPASTOS. (a) FROM S.E. (b) FROM S.

light window (FIG. 2). The dome, whose elongated drum springs from the four arches which form the sides of the square, is octagonal, each facet bearing a slender arch rising from the base of the drum to its horizontal cornice, with small windows at each point of the compass. Much of the brickwork of these arches has been faced with plaster, and the window on the north is plastered in. A band of dentil brick decoration surmounts each of the arches, and another runs round the base from which they spring. (The eastern side of the drum was lightly damaged by a shell.)

The western section of the church is composed of a single nave across which a transverse barrel-vault is superimposed, pierced by a two-light window at either end. The north and south gables bear remains of decoration in brick, and are adorned with brightly coloured glazed plates (five on the north and four on the south). The large exonarthex joined to the nave at its west end, as well as the covered ‘ portico ’ along its south side, are later additions —perhaps of the 16th century. The portico is found built on to many Epirote churches after the Turkish conquest, and was probably used for the storing of bones and coffins.

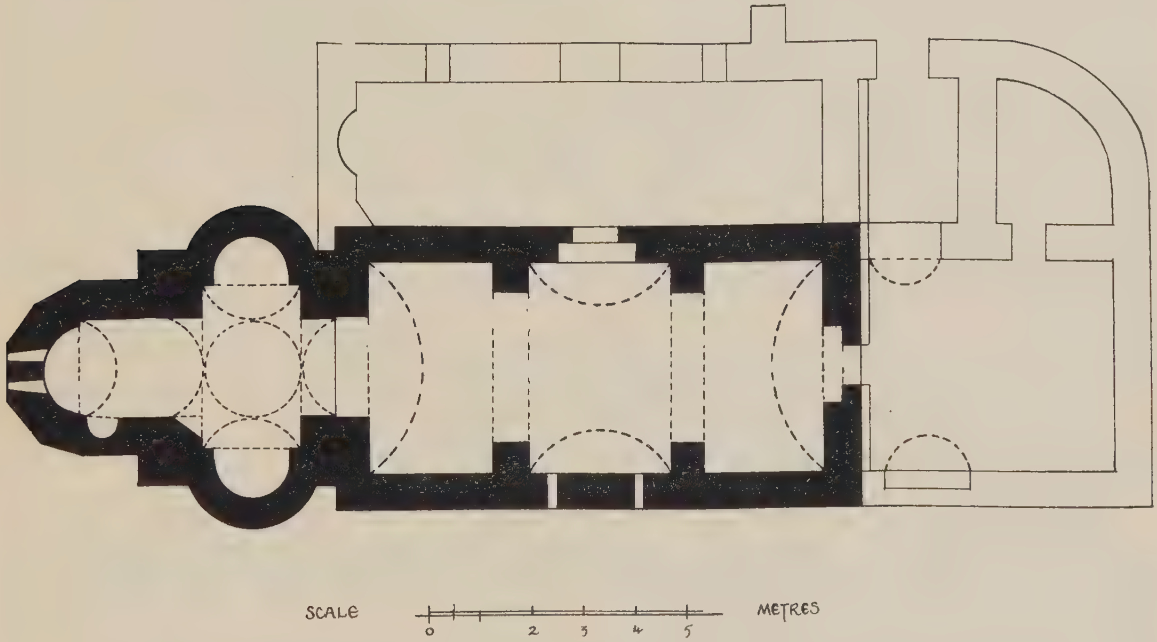


FIG. 2.—MONASTERY CHURCH OF THE DORMITION, MOLYVDOSKEPASTOS. PLAN.

The two parts of this church, despite their distinct forms of construction, appear to be contemporary. The scanty remains of brickwork and tile decoration—on the south gable of the transverse arch of the nave, on the drum of the dome, and on the north bay—all belong to the same period. The building seems to have been repaired at various times, but it is clear that the original construction was in the common Byzantine style of squared stones lined with bricks in the vertical and horizontal joints. On the south-east side of the apse and the lower parts of the walls there are traces of extensive plastering—two layers of painted decoration being visible; and it is probable that the two niches let into the exterior wall of the apse on this side contained frescoes of saints or benefactors, for on the outside of the western wall of the narthex there is a large arched recess in which the figures of a man and a woman are painted. (Their names and the accompanying inscription are unfortunately illegible, though they are almost certainly benefactors.)

Internally the church is very dark, and the surviving frescoes have suffered considerably from damp. In style they are more severe than the paintings in other churches of the district, though there is no evidence for dating them earlier than the beginning of the 16th century. In the eastern part of the church only the fragmentary Pantokrator in the dome is properly visible. The transverse vault of the nave is decorated with four large panel scenes representing the Crucifixion, the Transfiguration, the Entry into Jerusalem, and the Ascension. The walls of the nave are painted in the common Epirote–Macedonian scheme of three separate bands of figures—standing saints below, a row of heads of saints in medallions in the middle, and panel scenes from the liturgical cycle above. This system of wall-painting is found in most of the later churches of northern Greece, particularly in those of Verria, Kastoria, Ioannina, and the church of St. Basil at Arta. In the north-west corner of the nave an older layer of painting appears under the existing plaster, and this may perhaps be contemporary with the first reconstruction of the church, which appears to have taken place at the end of the 13th or beginning of the 14th centuries.

The west door leading into the nave is composed of two leaves of black wood finely carved, with three panels on each leaf. On the left are the Archangel Gabriel, an Apostle, and a winged lion and snake; on the right the Virgin, an Apostle, and a griffin rampant. Each panel is set in a carved frame, and the leaves of the door measure 0·55 × 1·50 metres. One leaf of the south door of the nave is similarly carved, but with purely geometric motifs.

Of the lead roof of the church, from which the village takes its present name, no traces now remain. The church of the Red Panagia, at Voulgareli, to the north-east of Arta, was likewise originally roofed with lead, as a traditional rhyme still testifies; and in later churches, notably on Mount Athos, the practice was quite common.[3]

An inscription over the west door of the nave refers to three stages in the history of the church—its traditional foundation by Constantine Pogonatos, its re-establishment by Andronikos Palaiologos, and its final restoration and decoration by the inhabitants of Pogoniani in 1521. The inscription [3a] is as follows:

† ἀνηγέρθη ἐκ βάθρων καὶ ἀνοικοδομήθη ὁ θεῖος καὶ πάνσεπτος ναὸς τῆς ὑπεραγίας Δεσπύνης ἡμῶν Θεοτόκου διά συνδρομῆς καὶ ἐξόδου τοῦ εὐσεβεστάτου βασιλέως καὶ ἀυδίμου Κωνσταντίνου τοῦ Μπωγωνάτου. μετὰ δὲ χρόνου(ς) πολλοὺς ἐρειμώθη παντελῶς καὶ ἀνεκαίνισεν (*sic*) αὐτὸν ὁ ᾽Ανδρόνικος ὁ Κομνηνὸς καὶ Μέγας Δούκας ὁ Παλαιολόγος. καὶ πάλην ἦλθεν εἰς ἔσχατον ἀφανισμὸν· καὶ ἀνεκαίνισεν (*sic*) καὶ ἐζωγράφησαν αὐτὼν ἡ τιμιότατη Μπωγωνιανίται (*sic*) ἐν ἔτη ͵ȝλʹ ἰνδ. ιʹ (7030 = A.D. 1521) Δεκεμβρίου αʹ ὥρα ὁ θσ (θεός) τίνος ἐστὶν ὁ κόπος.

The second restoration was most probably undertaken in the time of Andronikos II (A.D. 1282–1328). This Emperor is known to have confirmed the ecclesiastical and monastic privileges of the diocese of Ioannina in A.D. 1319 and 1321.[4] His name is also associated with the foundation of two churches in the district of Kastoria, that of the Taxiarches monastery of Tsoukas, near the village of Agia Anna, in A.D. 1285 and the church of St. George at

[3] The rhyme concerning the lead roof of Voulgareli is given by Lambros in Νέος Ἑλληνομνήμων II (1905), 290.

[3a] I am indebted to Professor R. Jenkins and Mr. S. J. Papastavrou for their help in elucidating this and the following inscriptions. I have adopted Professor Jenkins' suggestion that the Annus Mundi used in these churches is not 5508 but 5509 B.C.

[4] Miklosich and Müller, *Acta et Diplomata Graeca* V 78.

Omorphokklesia in A.D. 1287; while in the church of the Virgin of Apollonia at the estuary of the Voiussa river there is said to be a portrait of himself and his entire family, commemorating his restoration of the building.[5]

Over the eastern supporting arch of the dome, facing the altar, the following inscription is painted:

† οὗτος ὁ πανσεβάσμιος καὶ ἱερὸς ναὸς
ὅνπερ ὁρᾶται σήμερον ὁ τοῦ βρωτείου γένους
τῆς . . . . ⟨παμ⟩μακαρίστου
μητρὸς θεοῦ τοῦ ποητοῦ παντάνακτος κυρίου.
καθοραΐσης (*sic*) τοῦτον γοῦν (?)/ ἐν σεπτοτάτοις τύποις
οἱ ἁπαξάπαντες τοῦ νῦν καιροῦ μπωγωνιανίται
θαρρῶν(τες ?) . . . . . .
τῆς τελευταίας φοβερᾶς δευτέρας παρουσίας
ἐν ᾗ μέλλει ὁ Κύριος ἑκάστῳ/ ἀποδοῦναι
κατὰ τῶν ἔργων † τῶν αὐτῶν πράξας ζῶν † ἐν τῷ βίῳ
τούτῳ ἐλπίζειν ἔξεστιν χριστιαν(οῖς ?) . . .
. . . σεβόμενοι καὶ καθομολογοῦντες
υἱὸν καὶ λόγον τοῦ θεοῦ πατρὸς τοῦ προανάρχου.

Below this, in cursive script, are the words:

† πρωθιεραρχοῦντος τοιγαροῦν τῷ τηνικαῦτα χρόνῳ
τοῦ παναγιωτάτου τε κύρου Ἰερεμίου
† δόξαν ἐγὼ δὲ γεγραφὼς ταύτην ἐν θεῷ τὴν ἀρχὴν
τῷ δόντι καὶ τὸ τέλος. ‚ζμε΄ ἰνδ. ι΄ (7045 = A.D. 1536–37).

On the right of the arch is another inscription, almost wholly illegible.

The dating of this church in its present form must, for want of historical evidence, be attempted on the basis of its architectural style. The predominant features are the tall octagonal drum of the dome, the triconchal plan, and the transverse barrel vault of the nave. All these forms of construction occur in the late Byzantine churches of Epirus and Macedonia, but the closest architectural parallels as a whole are perhaps to be found in the district of Ochrida and Skoplje; and there is much that points to the influence of Serbian variations on the Byzantine style.

Of the dome raised high on a slender drum there are two varieties peculiar to the north of Greece and Serbia, the cylindrical and the octagonal. Tall domes with *cylindrical* drums are found at Ano Lambovon and Episkopi (in southern Albania),[6] in the churches of St. Demetrios Katsouri and St. Basil by the bridge at Arta,[7] and as far south as Gavrolimni near Naupaktos.[8] But the outstanding example in Greece is the small church of the Koumbelidiki at Kastoria, which (like that at Ano Lambovon) can be dated to the 11th century.[9] The similarities between the Koumbelidiki and the church of Molyvdoskepastos are many, both in plan and in general appearance, and it is possible that both churches owe their origin to the same period, the dome and apse of the latter having been altered and the nave added at a later date. The tall *octagonal* dome, however, which distinguishes the Molyvdoskepastos church, is distinctive also of the Serbian style of architecture. The elongated arch is a specifically Serbian feature, and belongs to a later period than the churches of Kastoria. In the neighbourhood of Ochrida and Skoplje there are several churches of the early 14th century which, while similar in plan to the Koumbelidiki, bear this particular form of dome, with its slender arches rising from the base of the drum to the cornice. That the Molyvdoskepastos church was restored at about this period is attested by the inscription relating to Andronikos II; and striking similarities of construction are to be seen in the churches of St. Naum, on the south-east shore of Lake Ochrida, of St. Nicholas on the Treska, to the south-west of Skoplje, and of St. Andrew nearby. Also similar in plan and construction is the church of the Holy Apostles at Kučevište, where the octagonal dome carries the undulating cornice, often replaced by a horizontal roof for greater security.[10]

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[5] Thalloczy, *Illyrisch–Albanische Forschungen* I 174. (The village at the foot of the hill on which the church of Apollonia stands is called Pojani, elsewhere found as a corruption of the name Pogoniani.)

[6] Published by Versakes in *AE* 1916, 108 and 114.

[7] Orlandos, Βυζαντινὰ Μνημεῖα τῆς Ἄρτης (Athens, 1937), II 57 f. and 148 f.

[8] Orlandos, Ἀρχεῖον τῶν Βυζ. Μνημ. I (1935), 105, 121.

[9] Orlandos, Ἀρχεῖον IV (1938), pt. ii, 125 f.

The transverse barrel-vault of the western section of the church (which must be contemporary with the existing form of the domed part of the building) has many parallels with various modifications throughout Epirus. It was a type of construction much favoured in the north of Greece from the 13th century on, and early examples are to be found in the monastery church of Kato Panagia at Arta,[11] at Kostaniani near Dodona,[12] and in the Porta Panagia church near Trikkala (dated to A.D. 1283),[13] though in all of these the transverse vault is raised much higher than the roof of the nave. In Ochrida the small church of Sts. Constantine and Helen of the 13th/14th centuries is of the same type. In later times the slightly simpler form of this construction found at Molyvdoskepastos became extremely common in Epirus; and in the district of Zagori and Delvinaki alone there are numerous small churches of the 15th/17th centuries built in this style (*e.g.* at Elaphotopos, Kastraki (near Artsista), Kleidoniavista, Vasilikon, etc.).

The architectural evidence thus corresponds with the information given in the inscription, and the church in its existing form can be dated to the end of the 13th or beginning of the 14th centuries—a period when the north of Epirus, following the renewed expansion of the Serbian Empire under Stephen Milutin (A.D. 1281–1321), was already under strong Serbian influence.[14] The ruin into which the church had fallen by the 16th century cannot have been so complete as the inscription suggests, since there remains ample evidence of the earlier construction in the upper parts of the building.

Of the churches in the village of Molyvdoskepastos the most important are those of St. Demetrios and of the Holy Apostles. The church of St. Demetrios is a small single-naved basilica, the east end of which is built on a spur of rock. From its present dilapidated condition little save the plan of the original building can be deduced (FIG. 3). The roof, which appears to have been arched, has long since disappeared, and only the semi-circular apse and the north wall remain standing. The foundations and lower parts of the walls are constructed of large stones, the upper parts of stones lined with two layers of brick. Externally the apse bears remains of some ornamental brickwork, notably in the blind arches on each of its seven faces, which are surmounted by a chain of dentil pattern (PLATE 35, *b*). Within the apse there are fragments of wall-painting and traces of a tile-mosaic floor, but the interior of the church is so piled with rubble and overgrown with weeds that closer inspection is impossible without considerable excavation. To judge from the construction of the apse the building may perhaps be considered contemporary with the earlier form of the monastery church, and tentatively dated to the 11th century.

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[10] Millet, *L'Art serbe*, 127, 129, 139–40.

[11] Orlandos, Βυζ. Μνημεῖα τῆς Ἄρτης II 70 f.

[12] Evangelides in Ἠπειρωτικὰ Χρονικά VI (1931), 258 f.

[13] Orlandos, Ἀρχεῖον I (1935), 5.

[14] Filow, *Early Bulgarian Art* 24.

The largest of the churches in Molyvdoskepastos, that of the Holy Apostles, stands a little outside the village, almost exactly on the present frontier between Greece and Albania. In plan it is of the cross-in-square pattern, with a large five-sided apse, a narthex on the west, and a covered ' portico ' on the south side (fig. 4). It is constructed entirely of stone, of a softer and lighter texture than the flinty stone used in the smaller churches of northern Epirus, and its bare walls are relieved by a series of blind arches set on the north and south sides and above the small windows in the apse. Each gable of the transept is pierced by a small two-light window surmounted by an arch of red brick, decorated with tiles in a manner suggestive of an earlier style of architecture than the present form of the rest of the building (fig. 6). The dome is twelve-sided with a conical tiled roof, each face of the drum bearing an arch of dentil pattern, and having originally six windows, two of which are now covered in. A ring of dentil runs round the horizontal cornice, and the drum is plastered and whitewashed. The belfry at the south-east corner of the church and the ' portico ' on the south side appear to be later additions (plate 35, *a*).

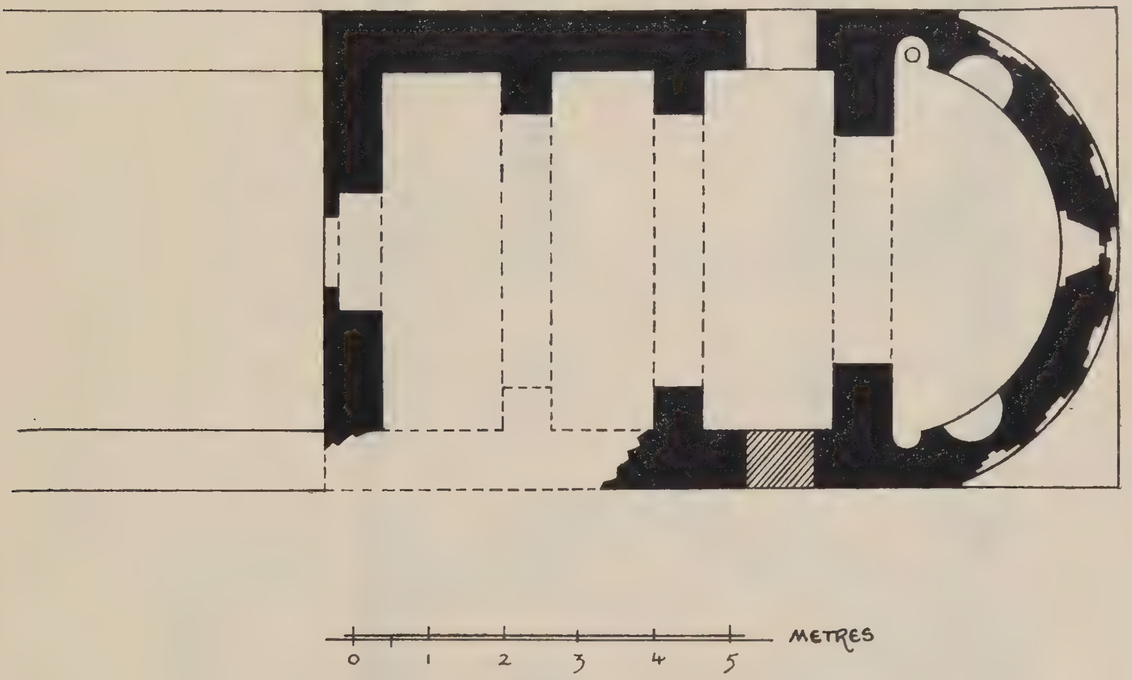

Fig. 3.—Church of St. Demetrios, Molyvdoskepastos. Plan.

Internally the dome is supported on four columns, hexagonal in shape. Behind the altar, in the circular recess of the apse, is a bishop's throne approached by two steps. The frescoes are well-preserved, covering the interior of the church on so large a scale and with such a competence of execution as to suggest that the artist was imported from Athos. The arrangement of the figures on the lower walls follows the Epirote–Macedonian convention adopted

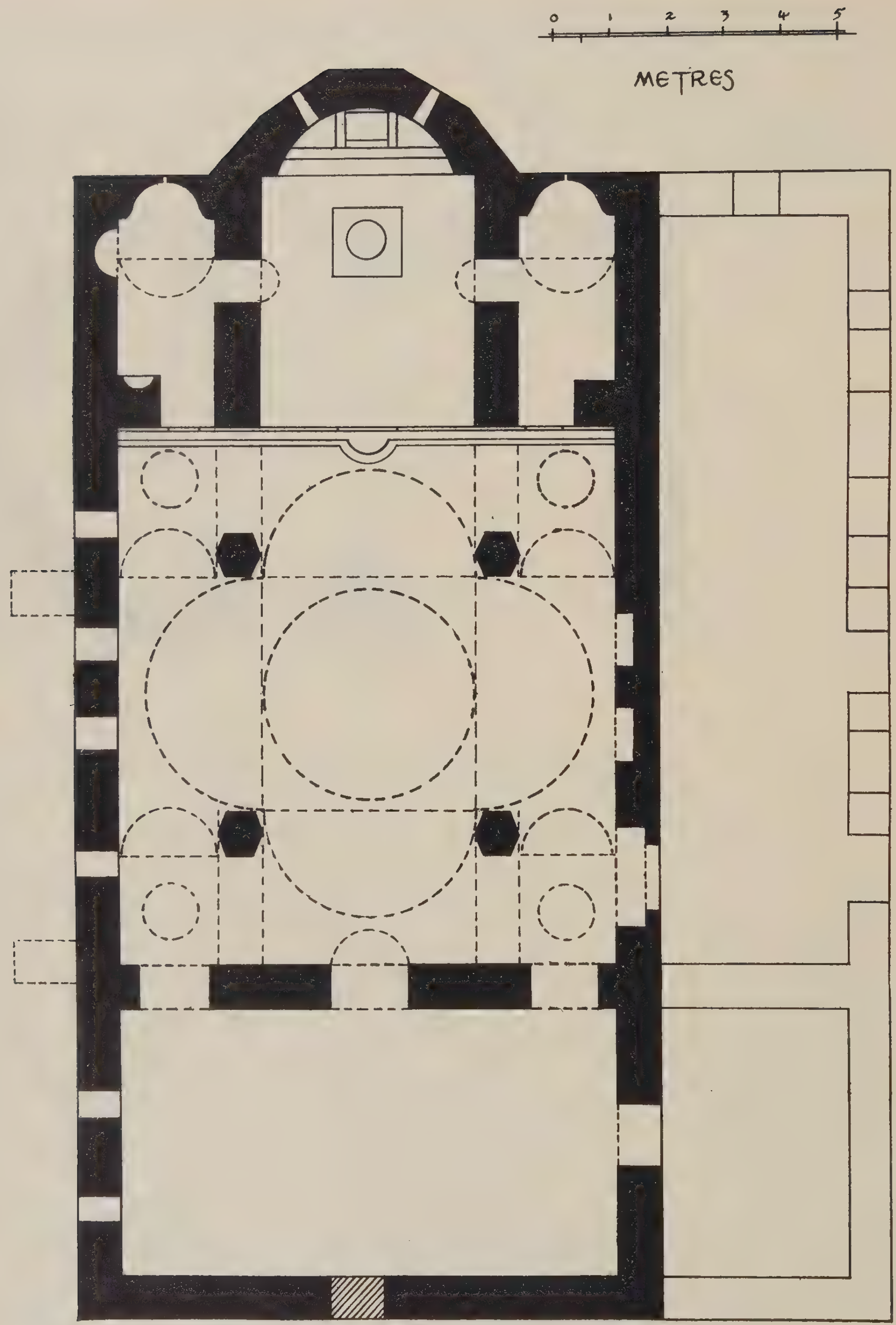
0
1
2
3
4
5
METRES

Fig. 4.—Church of the Holy Apostles, Molyvdoskepastos. Plan.

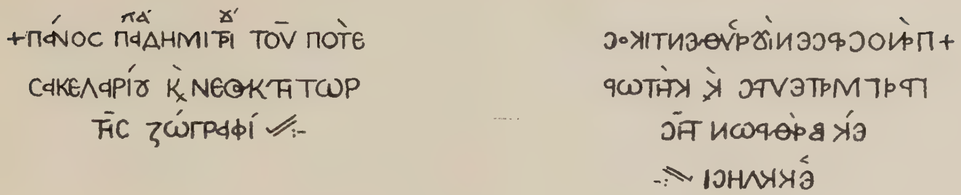
+ΠΑΝΟΣ ΠΑΔΗΜΙΤΗ ΤΟV ΠΟΤΕ
CΑΚΕΛΑΡΙΟ Κ ΝΕΟΚΤΗΤΩΡ
ΤΗC ΖΩΓΡΑΦΙ

Fig. 5.

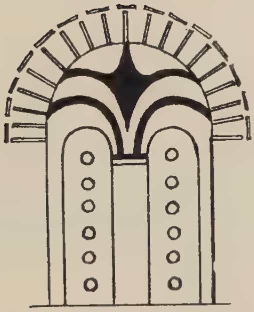

Fig. 6.

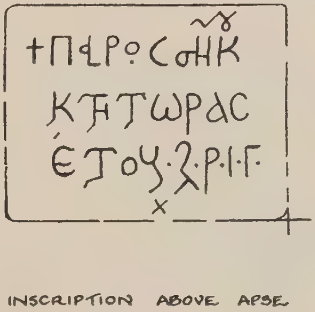
+ΠΕΤΡΟC ΟΗΚ
ΚΤΗΤΩΡΑC
ΕΤΟΥ·Ζ·Ρ·Ι·Γ·
INSCRIPTION ABOVE APSE

Fig. 7.

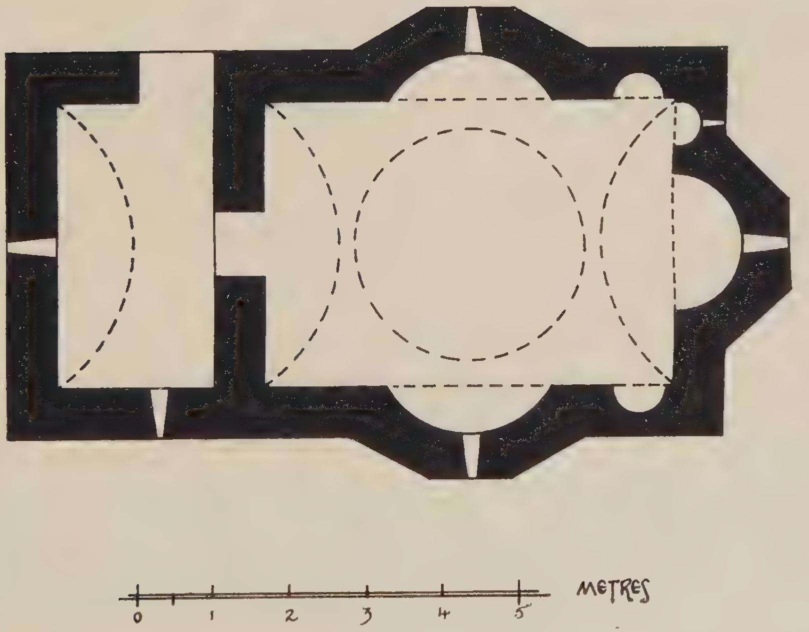
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Fig. 8.

Figs. 5–8.—Molyvdoskepastos. 5. Church of the Holy Apostles. Inscriptions Relating to Restorations (see Plate 31, *d*). 6. N. Gable Window of the Church. 7 and 8. Inscription over Apse, and Plan of Church of the Dormition.

in the monastery church, while the liturgical and scriptural scenes above and in the roof conform to the Athonite traditions of the 16th and 17th centuries, being comparable in style and colouring with those in the Metamorphosis monastery of the Meteora and in the monastery of Douskos near Trikkala. Particularly noteworthy is the scene of the Dormition of the Virgin over the west door and of the Crucifixion above. The paintings in the dome have deteriorated through damp, and only the Pantokrator in the centre and one of the four Evangelists in the pendentives survive. The hexagonal columns supporting the dome are painted with portraits of the heads of saints in medallions.

The inscription over the west door of the nave records two restorations of the church (PLATE 35, *c*):

> † οὗτος ὁ πάνσεπτος καὶ θεῖος ναὸς ὁ εἰς ὄνομα τιμώμενος τῶν ἁγίων ἐν/δόξων καὶ πανευφήμων ἀποστόλων ἀνηγέρθη ἐκ βάθρων εὐδοκίᾳ θεοῦ διὰ συν/δρομῆς κόπου τε καὶ ἐξόδου τοῦ ἐν μακαρίᾳ τῇ λήξει γενομένου κὺρ Πάνου τοῦ Ἀρσένη διὰ ψυχ/ικὴν αὐτοῦ σωτηρίαν καὶ τῶν γονέων αὐτοῦ κατὰ τὸ ͵ζμϛʹ ἔτος (7046 = A.D. 1537) ἀρχιερατεύοντος τοῦ ἀρχιεπισκόπου Πω/γωνιανῆς κύρου Παχωμίου. μετὰ δὲ παραδρομὴν χρόνων οὐκ ὀλίγων θείῳ ζήλῳ κινηθεὶς/ ὁ τιμιώτατος κὺρ Πάνος ὡς τὴν εὐπρέπειαν τοῦ οἴκου Κυρίου ἀγαπῶν ἐξοδίασεν ἐξ ἰδί/ων ἀναλωμάτων καὶ ἀνιστόρησεν αὐτόν. καὶ καλλώπισεν ὡς καθὼς ὁρᾶται ὑπὲρ ψυχικὴν/ αὐτοῦ σωτηρίαν καὶ τοῦ αὐτοῦ γονέων· ἀρχιερατεύοντος τοῦ πανιερωτάτου ἀρχιεπισκόπου Πωγωνιανῆς κύρου Παρθενίου—ἐν ἔτοι ͵ζρνδʹ (7154 = A.D. 1645) / μηνὶ Νοεμβρίω κʹ. χεὶρ ἐμοῦ τοῦ ταπεινοῦ Δημητρίου ἐκ χωρίου Γραμόστης καὶ τοῦ αὐτοῦ υἱοῦ Ἰωάννου Σκούταρι.

On the north side of this doorway are portraits of the two benefactors mentioned in the inscription. They are represented as prosperous merchants, holding up their church for inspection and benediction (PLATE 35, *d*). The accompanying inscriptions read as follows (FIG. 5):

On the left—

Πάνος Παπαδημητρίου τοῦ ποτὲ
σακελαρίου καὶ νέος κτήτωρ
τῆς ζωγραφίας.

On the right (*retrograde*)—

Πάνος Ἀρσενίου αὐθεντικὸς
πραγματευτὴς καὶ κτήτωρ
ἐκ βάθρων τῆς
ἐκκλησίας.

According to this information the church was founded (or rather restored) by Panos Arseniou in 1537, in the time of Pachomios, Archbishop of Pogoniani. The renovation and decoration of the building as it stands today must be attributed to the second benefactor, Panos Papademetriou, in 1645, during the Archbishopric of Parthenios. The earlier of these two dates is confirmed by an incised inscription on a plaque let into the north wall of the narthex on the outside, which reads as follows:

μ . . . . . ης καὶ κτήτωρ ͵ζμϛʹ (7046 = A.D. 1537).

(The small church of St. Sozon in the village of Molyvdoskepastos bears an inscription of the same date.)

Despite the evidence of these inscriptions, however, there can be little doubt that the church of the Holy Apostles was originally built before the 16th century; and though the internal and external renovations have obscured its earlier form, the traces of older wall-paintings here and there under the 17th-century decoration on the one hand, and the appearance of the dome and the brick ornamentation of the gable windows on the other, point to an earlier period. An interesting parallel, especially in the form of the dome, is to be seen in the church of St. Niketas at Curčer in Serbia, which was first renovated by Stephen Milutin between A.D. 1309 and A.D. 1316, and restored in A.D. 1483;[15] and it seems likely that the Holy Apostles church was first erected in the 13th/14th centuries, at the time of the reconstruction of the monastery of Molyvdoskepastos, and possibly by the same architects.

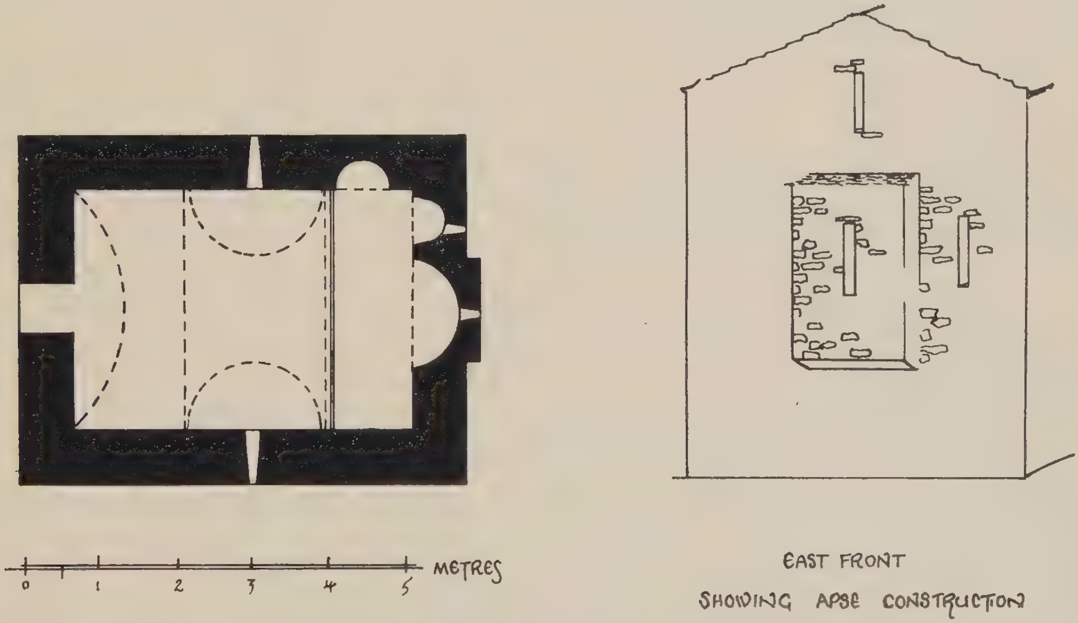

FIG. 9.—CHURCH OF THE HOLY TRINITY, MOLYVDOSKEPASTOS. PLAN AND EAST FRONT.

This theory is supported by the evidence of the diocesan lists of Pogoniani, in which the date of the foundation of the Holy Apostles church, and its consecration as the Cathedral of Pogoniani, is given as A.D. 1298, ‘ in the time of the Archbishop Pachomios ’. The list of archbishops from which this information is derived mentions no other Pachomios, and it may be that the account given in the inscription in the church is confused. But the records of succession are by no means complete, and in fact the most exhaustive list shows an interval of forty-seven years (between A.D. 1503 and A.D. 1550), during which a second Pachomios might well have held the see.[16] At all events the architectural evidence of pre-16th-century construction accords tolerably well with the supposed foundation date of 1298; and the presence of the bishop's throne in the apse makes it clear that the Holy Apostles was used (if not built) as the Cathedral church of Pogoniani.

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[15] Millet, *L'École grecque dans l'architecture byzantine* 12 n. 5, and plate 107.

[16] The fullest list of the Archbishops of Pogoniani (in which the date 1298 is assigned to the Holy Apostles church) is given by N. G. Mystakides in the periodical Ἠπειρωτικὸς Ἀστὴρ (ἔτος α', Athens, 1904), 132–5. A list from the 16th to the 19th centuries is published by Germanos, Metropolitan of Sardis, in Ἠπειρωτικὰ Χρονικὰ XII (1937), 93–5. Le Quien (*Oriens Christianus* II, cols. 93–4), mentions three Archbishops of the ‘ Ecclesia Pogoianae ’.

The ecclesiastical importance of Molyvdoskepastos from the 16th century onwards can be judged from the number of smaller churches in the village and district, several of them unfortunately destroyed in recent years. Two of these are situated on the hillside between the monastery and the village—that of the Dormition being a small triconchal building dated 1560 and 1604 (FIGS. 7, 8), that of the Trinity being a tiny chapel with a transverse vault, perched on the edge of a cliff, also perhaps of 16th-century construction (FIG. 9). Of the church of St. Sozon (already mentioned), which stands in the village itself, nothing remains but the three-sided apse and ruined walls. A fragment of painting survives on the inner wall of the apse, and the date A.D. 1537 is inscribed above the window outside. The destroyed churches of St. Nicolas and St. Eustathios nearby, and that of St. Athanasios across the border in Albania, are probably of later date.

Historical Note

In conclusion, it is perhaps worth recording such historical data concerning the diocese of Pogoniani as it seems possible to compile. The tradition of the foundation of the monastery of Molyvdoskepastos by Constantine IV Pogonatos is attested by certain documents in the Patriarchate at Constantinople, though the authenticity of this material is as doubtful as its date.[17] The archbishopric of Pogoniani was instituted by special dispensation of this Emperor on his return from Sicily in A.D. 668, and given jurisdiction over the three bishoprics of Selasphoros (or Devol), Poulcherioupolis (or Berat), and Devrae (or Dibra). Parthenios, the first Archbishop, is said to have travelled to Constantinople to receive the Patriarchal Bull confirming the 'royal' and 'stavropegic' nature of the monastery: and at least until the 13th century the archiepiscopal throne of Pogoniani seems commonly to have been filled by the abbots, who, by virtue of their authority over a specially privileged foundation, owed allegiance direct to the Patriarch and bore the title of 'protopappas'. The rise of the Bulgarian Empire in the 10th century must considerably have minimised the importance of the diocese, and the greater part of its territory, including the bishoprics of Devol, Berat, and Dibra, was soon recognised as being dependent upon the extensive see of Ochrida. Pogoniani is not mentioned in the diocesan lists of Samuel of Bulgaria, which were ratified by Basil II early in the 11th century: and the names of only five archbishops can be traced between the years A.D. 982 and A.D. 1270.

There is no record of the archbishopric in the ecclesiastical documents or correspondence of the clergy of the Despotate of Epirus, but in the latter part of the 13th century, after the restoration of the Byzantine Empire, it seems to have acquired a new importance. Under the Emperor Andronikos II Palaiologos (A.D. 1282–1328), when the possession of Epirus and Macedonia was already being threatened by the Serbs, the monastery was rebuilt and the church of the Holy Apostles erected as the Cathedral of Pogoniani (A.D. 1298). In the so-called *Ekthesis* of Andronikos III (A.D. 1328–41) Pogoniani figures as twenty-fifth in the list of archbishoprics; and in the following century, after the fall of Constantinople, it ranks as fourth amongst the eight archbishops of the Patriarchate.[18] During the Turkish occupation of Greece the monastery of Molyvdoskepastos shared with the monastery of Vellas and with the later foundation of Dróviani the reputation of being a centre of education and Hellenic culture, and is said to have possessed a rich library; and the names of a number of archbishops and abbots (ἀρχιεπίσκοποι and πρωτοπαππάδες) have been preserved from this period.[19] In the 17th century Pogoniani comes third on a list of archbishops dependent upon the Patriarch (after Karpathos and Aigina), and the geographer Meletios, writing in A.D. 1695, refers to its archiepiscopal throne.[20]

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[17] It is published by Mystakides in his list of the Archbishops of Pogoniani (*loc. cit.* n. 16).

[18] Gelzer, *Eine Notitia der Türkenzeit* (in *Abhandlungen der philosoph.-philolog. Klasse der kngl.-bayer. Akademie der Wissenschaften* XXI (1901), pt. III, 612, 630).

About A.D. 1770 the town of Dipalitsa was destroyed and its inhabitants driven out by the Albanians. The ecclesiastical and civil administration of the diocese was transferred first to the neighbouring village of Kakólakkos, and then (about A.D. 1846) to Vostina, which now bears the name of Pogoniani. Meanwhile the archbishops retired into exile, and directed the affairs of their flock from the comparative safety of Bucharest. This state of affairs continued until A.D. 1828, when the Patriarch intervened, and the diocese of Pogoniani (now dignified with the title of a metropolis) was united with that of Koritsa. Six years later (in A.D. 1834) the complaints of the inhabitants of Pogoniani compelled a review of the situation, and the diocese was joined with that of Vellas, a former suffragan bishopric of Ioannina. In A.D. 1842 this arrangement also broke down, and for twenty-one years Pogoniani reverted to the status of an archbishopric (or ' metropolis ') in its own right. The last archbishop was one Panaretos, a Bulgarian from Tirnovo, who followed the example of his predecessors and resided at Bucharest, maintaining himself on the revenues of the monastery of Molyvdoskepastos and its properties in Thessaly. Finally, in A.D. 1863, the Archbishopric of Pogoniani was dissolved by decree of the Patriarch, and included in the combined diocese of Koritsa and Vellas.[21]

A manuscript, dated A.D. 1778, found in the monastery at Molyvdoskepastos gives, besides a copy of the inscription relating to its foundation, a list of the names of ten of the high priests or abbots (ἀρχιερεῖς). No dates are assigned to these names, and it can only be assumed that they are in chronological order, but in so far as they supplement the existing information about this diocese they are perhaps worth recording. The names are as follows: Gennadios, Joacheim, Esaias, Joacheim, Symeon, Gabriel, Pachomios, Anthimos, Matthew, and Philotheos. It may be supposed that this list goes back no farther than the 17th century, since the Jeremy mentioned in the monastery inscription as πρωθιεραρχῶν in A.D. 1536–37 is omitted. The Anthimos may perhaps be identified with the archbishop of that name mentioned in two other sources, who as πρωτοπαππᾶς Πωγωνιανῆς occupied the throne in A.D. 1620, although the administration of the diocese of Pogoniani does not seem to have been often committed to the care of the abbots of the monastery in the latter stages of its history.[22]

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[19] *Cf.* Mystakides, *loc. cit.* The Parthenios mentioned in the inscription in the Holy Apostles church (A.D. 1645) figures on the list published by Mystakides under the date A.D. 1643. *Cf.* also a document of the same date (September A.D. 1643) signed by Ghinos, clerk to the archbishop of Pogoniani, mentioned in 'Ηπειρωτικὰ Χρονικά XII 108.

[20] Z. von Lingenthal, ' Zur Kentniss der Notitiae Episcopatuum Graecorum ' (in *Monatsberichte der kngl.-preuss. Akademie der Wissenschaften*, April, 1878) 279.

[21] The three Patriarchal decrees relating to these various changes are published by Germanos in 'Ηπειρωτικὰ Χρονικά XII (1937), 84–93.

[22] Anthimos appears in a document published by Sathas (*Bibliotheca Graeca Medii Aevi* III 561) and also in the diocesan list compiled by Germanos (*loc. cit.*), though not in that published by Mystakides. A letter of Gabriel, archbishop of Pogoniani (*fl.* A.D. 1572 according to Mystakides), is published by Martin Crusius in his *Turco-Graecia* IV 337. Euthymios (archbishop A.D. 1702–8 according to Mystakides) is signatory to a document of March A.D. 1708 published in Gelzer's *Patriarchat von Achrida* 121, line 12.

EXCAVATIONS NEAR MAMOUSIA IN ACHAIA

(PLATES 36–38)

About four miles south of the modern railway station of Diakophto in Achaia, on a high saddle between the valleys of the rivers known to Colonel Leake as the Bokhusia and River of Kalavryta, just north of the modern village of Mamousia, are the remains of a small walled ancient city. Leake[1] supposed these ruins to be those of the ancient Achaean city of Keryneia: later the French Scientific Commission[2] in the Morea identified them with the town of Bura: Leake accepted this view, which prevailed generally until it was refuted by Professor Ernst Meyer of Zürich in 1938.[3] I was not at first inclined to accept all Professor Meyer's arguments; he has, however, courteously answered my objections, and a re-examination of the evidence has convinced me that he is right and that the ruins are indeed those of Keryneia.

I visited the ruins at the end of 1950 and in the foundations of a small building above the theatre discovered an antique bronze in the form of the head and neck of a goose. This I took to the National Museum in Athens, where it was cleaned and found to be of such interest that a small joint excavation by Mr. Zapheiropoulos, Ephor of Antiquities, and myself, was agreed upon.[4]

This excavation was carried out in May 1951. Unfortunately Mr. Zapheiropoulos was unable to be present himself, but I had the benefit of the guidance of his experienced foreman, Mr. Andreas Mitropoulos.

The appearance of the site before excavation suggested a fairly small rectangular building: investigation showed that the foundations extended considerably farther westward and that the remains were those of a small dwelling-house measuring some four metres north and south by ten metres east and west.

Over this area the hillside, which slopes from north to south and is formed of a soft rock under a thin covering of soil, has been cut away to make a level platform. South and west of this the ground falls away very sharply, particularly at the north-west corner. Above the house, to the north, the slope rises more gently. The foundations of the house are set upon the rock platform: they are built of roughly cut blocks of the local stone, of varying size, set loosely in dried mud. They are nowhere more than two courses high: the mound of earth and tile which covered the centre of the site suggests that the walls were built mainly of mud brick. The foundations of the north and east walls were set upon the top of the rock cutting, which in the north-east corner is 1·50 m. deep (FIG. 1, A–A; PLATE 37, *b*). The ground floor of the house (see plan, FIG. 1) contained three rooms.

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[1] *Travels in the Morea* III 182 ff.

[2] Boblaye, *Recherches Géographiques sur les Ruines de la Morée* 26 ff. Leake, *Peloponnesiaca* 387.

[3] Meyer, *Peloponnesische Wanderungen* ch. 12, especially 127 ff. As I am now converted to Professor Meyer's opinion, I will content myself with referring the reader to his book for a fuller description of the site and an account of the literary evidence.

[4] I would like to express my thanks to the Oxford Craven Committee, whose generosity enabled me to pay my share of the expenses, and to the Students and Governing Body of Christ Church, in particular to Mr. R. H. Dundas.

Of the many people who have helped me with advice and in other ways I must make particular mention of Mr. J. M. Cook, Director of the School, Mrs. S. Karouzou and Mr. Zapheiropoulos, of the Greek Archaeological Service, and Miss S. Benton, who first suggested to me the idea of a topographical survey of Achaia.

The plans are the work of Mr. G. U. S. Corbett of King's College, Cambridge. The sections of pots were drawn by Miss Audrey Petty, and I owe the photographs of the bronzes to the kindness of the authorities of the National Museum.

I would also like to express my gratitude to Mr. Alexander Theophanopoulos, of Mamousia, for his hospitality on numerous occasions.

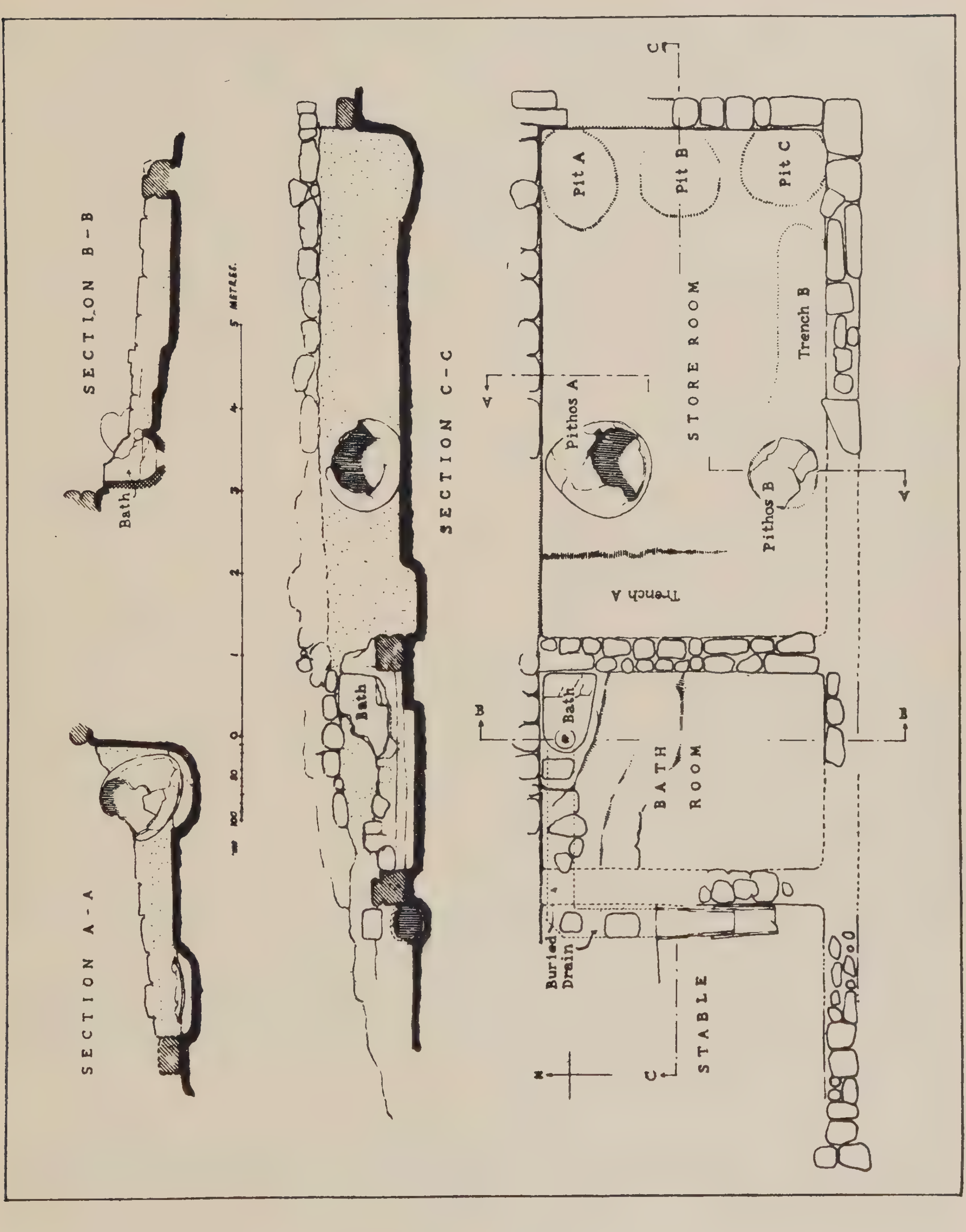
SECTION A-A
SECTION B-B
Bath
100 50 0 1 2 3 4 5 METRES
SECTION C-C
Bath
C
Pit A
Pit B
Pit C
STORE ROOM
Trench B
Pithos A
Pithos B
Trench A
A
B
Bath
BATH ROOM
B
Buried Drain
STABLE
N
C

FIG. 1.—PLAN AND SECTIONS OF THE HOUSE NEAR MAMOUSIA.

(1) *The Storeroom.* At the east end was the largest, measuring internally 3·50 × 6·20 m. This appears to have been a store-room. It contained two large pithoi, the first (' Pithos A ') (PLATE 37, *a*) almost complete, the second (' pithos B ') much broken.[5] These pithoi had originally been set upright in shallow pits cut in the rock (fragments of pottery under Pithos A, one of which joined with a piece lying on the floor, show that it was not in its normal position when found). Three similar pits (Pits A, B, and C) had been cut in the floor at the east end, but the jars which they presumably once held had been removed some time before the house was abandoned. At the bottom of Pit B, resting on a small piece of broken tile, were a pair of iron tongs and a small cast bronze cockle-shell.[6] This pit also contained a solid bronze knucklebone. Each of the other pits contained one bronze cockle-shell. Two shallow trenches (A and B, FIG. 1) had been cut into the rock along the west and south sides of the room. Trench A contained numerous scraps of lead (apparently once used in riveting together large pots) and a number of large disc loomweights. There were very few loomweights elsewhere, and it seems certain to me that the loom actually stood here. The purpose of Trench B is not clear: it can hardly have been intended to take the foundations of the south wall and may be no more than an extension of the pit containing Pithos B. The fill above the floor contained numerous fragments of pottery and also the cake stamp,[7] besides a few unimportant scraps of bronze. The bronze goose's head came from the upper fill of the south-east corner of this room. The upper level of the fill, particularly the mound covering Pithos A, contained many broken pieces of tile. The presence of numerous sherds in the fill of the ' pits ' and ' trenches ' similar to those higher in the fill seems to show that these pits were open until the time when the house was abandoned.

(2) *The Bathroom.* West of the Storeroom was a smaller room, measuring 2·35 × 3·50 m. (PLATE 36). Its principal feature is a cement bath (PLATE 36, *b*) built into the north-east corner against the scarped face of the rock. This consists of two small basins. The larger measures 1·02 × 0·68 m. At the east end is a seat 0·32 m. broad and 0·19 m. high. The west end is rounded and has in its floor a circular sump (diam. 0·27, depth 0·10 m.) from which a hole leads into a drain. This drain runs along the north wall of the room and out under the north-west corner, where it turns sharply south and continues along the west side of the wall between the bathroom and stable. Inside the bathroom it is completely covered in with a row of large rough stones irregularly set. The south side of the bath is broken, but does not appear to have been much more than 0·25 m. deep. There is no trace of any mechanical filling device, and it seems that the person having the bath sat on the step and had water poured over him in the Homeric manner. This must have caused a lot of splashing, whose effects were guarded against by covering the north part of the bathroom floor with cement. The cement floor is badly broken, but there seem to have been two shallow and irregular steps leading down from north to south (FIG. 1, Section B–B ; FIG. 7, *c*).

The purpose of the small basin next the west end of the bath is not clear. Its greatest internal dimensions are 0·35 × 0·25 × 0·20 m. deep. There is no arrangement for draining it. There was no sign that it was fitted with a lid to guard against splashing, but I think it likeliest that it was a box for toilet necessities.

The earth fill of the bathroom contained many pieces of tile and sherds, mostly from deep plates.

(3) *The Stable.* At the west end of the house was a small enclosure, whose south and

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[5] The base of Pithos B was similar to that from the 'Pyramid' of Ligurio in the Argolid published by Scranton, *Hesperia* VII 533–4 and fig. 5.

[6] A fuller description and discussion of the finds is reserved till later.

[7] See below, no. 41.

east sides only are preserved. This seems to have measured 2·75 × 3·50 m. It contained a layer of blackened earth nearly a foot deep in which were very few sherds and no pieces of tile except at the east end. There was also one animal's tooth and one bronze coin. The blackening was not, to the best of my judgement, caused by burning, as there were no scraps of ash or charcoal on the ground. The drain from the bathroom led along the east side of this enclosure: it was originally covered in, but I dug out the southern half of it (PLATE 36, *c*). This was formed of two gutter tiles laid, the upper overlapping the lower, in a shallow trench. The tiles were originally 0·96 m. long: the breadth tapered from 0·36 to 0·24 m. The depth of the gutter was 0·11 m. The gutter tiles of the roof apparently were of the same size, though they were so smashed that I failed to reconstruct a whole one from the fragments. The drain had been covered with similar tiles, but these were completely smashed.

The wall between the bathroom and the stable was much ruined but certainly continuous. The evidence for calling this enclosure a stable is as follows: (*a*) It was not roofed with tile, and so formed no part of the main house. (*b*) But the dark earth (of quite a different colour from the natural soil and the fill of the other rooms) shows that it was occupied in some way, and in a rather different way from the rest of the house. (*c*) The dark earth is not just rotted household rubbish: a midden would have contained many more sherds and probably bones. (*d*) In this rough country mules and donkeys provide the only means of transport: I see no reason to doubt that they were much needed in antiquity, and if so they must have been stabled somewhere.

The ground plan of the house is certainly complete. The sharp fall of the ground to the south and west makes it impossible that once there were more buildings on these sides. There is no room to the east, and a trial trench on the north revealed nothing but native rock under a thin covering of barren soil.

On the other hand, in the rooms I excavated there was no sign of a hearth, and the storeroom was full of jars and the loom. It therefore seems to me that there must have been an upper floor, where the inhabitants of the house cooked, ate, and slept. The typical village house today in this part of the country has two floors: the lower is used as a storeroom and stable and does not communicate directly with the upper one, which is reached by an outside wooden staircase. Here the family live, warming themselves and cooking at an open hearth, on either side of which are the raised wooden platforms which serve as beds by night and seats by day. There is often a second room with a somewhat finer bed, for the head of the household or for guests. I have yet to find a bath. If our house was similarly arranged, the rooms on the ground floor will have been reached through doors corresponding with the gaps in the south wall (see plan, FIG. 1). This arrangement seems to me most probable, though I could find no trace of thresholds or door jambs (probably these were made of wood, but one might have expected at least a post hole). But the south wall is very ruined and the gaps may be accidental. The upper storey would be reached by a wooden stair on the north or uphill side. Here the rock has already been cut away to a depth of more than a metre, and only a short flight of steps would be needed.

THE POTTERY[8]

Only one vessel (the cup no. 12 below) was found complete. It was lying at the bottom of Trench B. The remainder of the pottery was smashed and scattered about the floor, mostly in the storeroom. Although the pottery was all broken, there was much more of it than

[8] Homer A. Thompson, 'Two Centuries of Hellenistic Pottery', *Hesperia* III 311 ff., is referred to as 'Thompson'.

might reasonably be supposed to have accumulated in odd corners while the house was still occupied; even the most careless of housewives might be expected to sweep her floors occasionally. There was no stratification. I believe therefore that the pottery found was more or less what was in the house at the time of its abandonment, being broken either at the time or when the roof fell in. Apart from this broken pottery there are no very obvious marks of violence: the house was certainly not burned. The following pieces could be reconstructed sufficiently to deserve illustration (PLATE 37, *c–d*; FIGS. 2–5).

1–10. *Plates.*

The most common pots from the excavation are small, deep plates. They are very poorly finished. The inside is covered with inferior glaze, varying in colour from dull red to black-brown. One or two pieces may be deliberately attempting a red glaze in imitation of Pergamene and similar fabrics, but I think that the variations in colour are accidental and I have not therefore listed these plates separately. No. 10 is certainly of a different fabric from the others. For profiles, see FIG. 2.

1. H. 0·05; D. 0·185. About one-quarter of plate. Yellowish clay. High base ring. Lip turned slightly out. Shallow grooves round lip and bottom of inside. Inside completely covered with brown-black glaze, which has been allowed to run down part of outside.

2. H. 0·045; D. 0·16. About one-third of plate. Yellowish clay. High base ring. Groove at lip slightly more pronounced. Glaze very poorly preserved. Colour varies from black to red inside; outside unglazed except for one red splash near rim.

3. D. 0·185. About one-fifth of plate: base ring broken. Pink clay. Lip turned out and slightly thickened, with groove well marked. Inside, black glaze at bottom; traces of red near rim. Outside traces of red. It is not clear whether the whole inside was once glazed or not.

4. D. 0·155. About one-fifth of plate. Base missing. Pink clay. Lip thickened with slight groove. Inside red-black glaze near bottom. Outside red glaze, badly preserved but apparently originally covering whole surface.

5. H. 0·05; D. 0·18. Rather more than half preserved. Light brown clay. High base ring. Lip turned out and marked with narrow but deep groove. Small groove round bottom of inside. Inside completely glazed: glaze has been allowed to run over about half outside. Colour varies from brown to black.

6. H. 0·035; D. 0·19. About one-third preserved. Reddish brown clay. High base ring. Lip turned sharply out and marked inside with three narrow incisions. Groove round bottom of inside. Glaze similar to no. 5, which this plate also resembles in the careless manner in which it has been turned on the wheel.

7. H. 0·035; D. 0·16. About half preserved. Pink clay. High base ring. Lip turned sharply out. Marked grooves round bottom of inside and lip. The shape is irregular, as one side is warped. Inside completely glazed; outside irregularly splashed over most of its surface; inside varies from black to red: outside red.

8. H. 0·03; D. 0·12. About half preserved. Light brown clay. High base ring. Lip plain except for slight groove inside. Black glaze on inside only.

9. H. 0·04; D. 0·115. Pink clay. High base ring. Lip slightly thickened. Red glaze inside and outside, very badly preserved.

10. H. 0·035; D. 0·165. About one-quarter of plate. Coarse gritty reddish brown clay. High base ring. Lip straight, with slight groove. Glaze entirely perished except for trace of red in lip groove and trace of black outside.

11. *Bowl with Incurved Lip.*

H. 0·03; D. 0·075. Complete except for rather more than half rim. Clay and glaze similar to No. 7. Inside completely glazed: splashes on outside. FIG. 2.

12–13. *Small Cups.*

12. H. 0·045; D. of rim 0·045. Complete. Pink clay; red glaze inside and out, very badly preserved. Almost flat base slightly set off from the sides, with wheelmarks not smoothed off. Flaring lip: thick strap handle. FIG. 2.

13. H. 0·04; D. of rim 0·045. Half body, most of rim and greater part of handle lost. Light brown clay. Brown-black glaze all over outside, including base: inside reserved except for splashes. Flat base slightly set off from the sides: widely flaring lip; vertical strap handle. Rather finer fabric than no. 12. FIG. 2.

14. *Pyxis Lid*(?).

D. 0·08. About one-quarter preserved. Light brown clay. Red glaze on inside only. On the outside, a thin groove near the rim and a heavy rib half-way between the centre and the rim. FIG. 2.

15. *Fragment of Rim* (*of Small Jug*?).

D. 0·045. Pink clay, red glaze inside and out. Round mouth with no sign of spout or handle. Rim thickened: three narrow grooves below rim. FIG. 2.

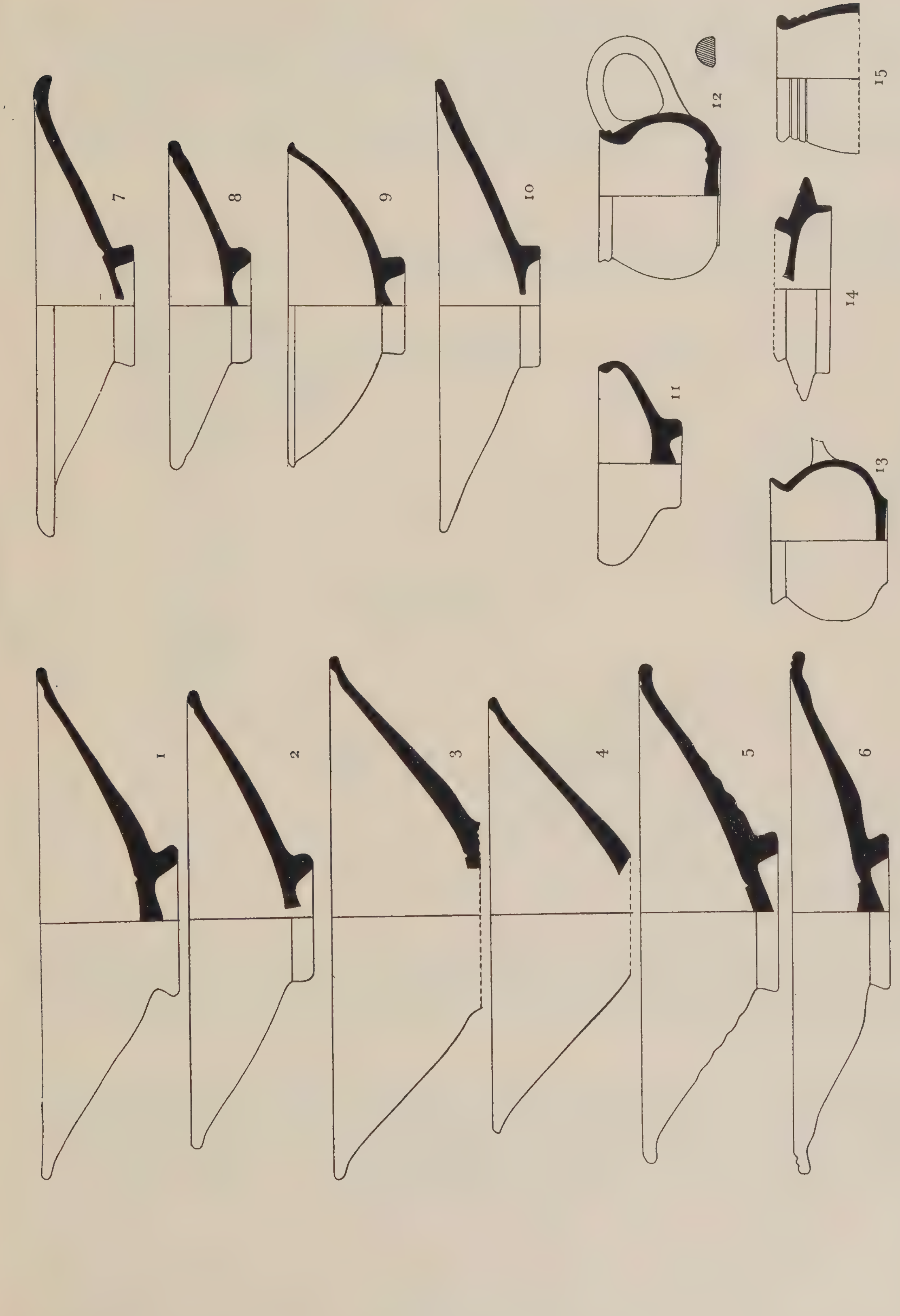
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FIG. 2.—SMALL PLATES, BOWLS, ETC. (Scale: Nos. 1–6, 1/2·25; Nos. 7–15, 1/2·1.)

16–17. '*West Slope Ware*'.

16. Large piece of rim. D. 0·20. Probably from a large kantharos. Light brown clay, certainly not Attic. Inferior black glaze. Decorated with incised pattern of checkerboard and diminishing rectangles. Alternate squares of the checkerboard were painted, presumably white, and there was a painted band below the rim and a painted stripe separating the two right-hand groups of diminishing rectangles. The paint has everywhere disappeared, but the glaze is better preserved where it was. PLATE 37, *c*.

17. ? Kantharoi. A number of fragments, too broken to be reconstructed, appear to come from small kantharoi. The most important are the handles shown in PLATE 37, *c*. None of these fragments is decorated in the West Slope style, but they are otherwise similar in glaze and fabric to no. 16. The fragments are too small for the size of the vases to which they belonged to be ascertained accurately, but they were obviously smaller than no. 16.

18–20. '*Megarian*' *Bowls*.

18. Bowl with long petals. D. of rim 0·145. About half of rim and much of body lost. Brown clay. Brown-black matt paint inside and out. In the medallion, an eight-petalled rosette. From round it spring long petals. The high inturned rim is left plain. The decoration is similar to that of Thomson D 39, but the shape and height of the rim make it certain that this bowl is not Attic, nor is it like the Delian bowls illustrated by Courby,[9] the rims of which, though inturned, are much lower. It seems probable that it was made locally, though an imported mould may have been used for the decoration of the lower half. FIG. 3.

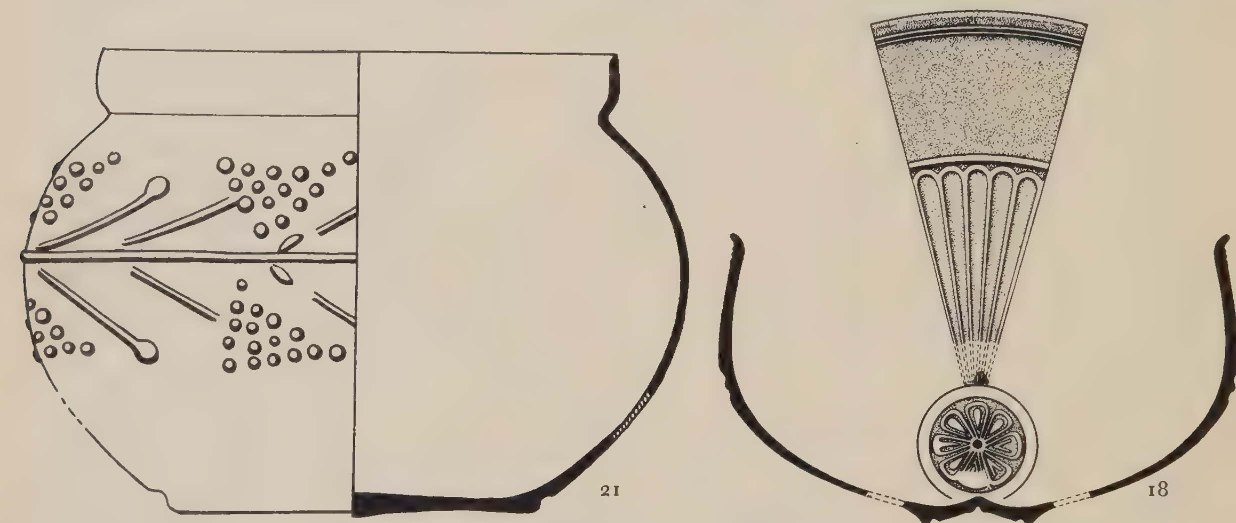

FIG. 3.—BOWLS WITH RELIEF DECORATION. (Scale: 21, 6/7; 18, 1/2·2.)

19. Medallion from a similar bowl. Clay and glaze similar to no. 18. The rosette is smaller and less carefully executed, and is not set in the centre of its medallion. If the mould for no. 18 was imported, no. 19 may well have been made from an inferior local copy. PLATE 37, *c*.

20. Fragment of bowl with long petals. Red clay. Red glaze of quality superior to that of nos. 18 and 19. The petals are separated from each other by jewelled lines: compare Thompson D 40.

21. *Bowl with Relief Decoration*.

H. 0·07 (estimated). D. of rim 0·07. Reconstructed from fragments: about half rim and much of body lost. Bright red clay: very fine, almost eggshell, fabric: traces of black glaze on the outside. Flat base, divided from the sides by a deep groove. Globular body: high lip sharply offset. There is no trace of a handle. Round the widest part of the body is a rib raised in relief: branching symmetrically above and below this rib are schematic representations of bunches of grapes alternating with vine tendrils. FIG. 3.

22–26. *Grey Ware*.

Several fragments were found of a hard, slate-coloured fabric, covered with a dark-grey glaze, which was perhaps originally black but is very much worn on all the pieces found. A few pieces of a similar fabric were found in Thompson's Group E (E 154–8), and he suggests that this grey ware may have come from Asia Minor.

[9] *Vases grecs à reliefs* pls. XI–XIII.

22. Fragment of large plate. D. of base ring 0·11. High base ring: flat floor. In the middle of the floor a rouletted circle: a second rouletted circle further out. FIG. 4.

23. Fragment of rim of plate. D. about 0·20. The inside of the rim is divided from the floor by a narrow channel: just above this two lines have been incised round the inside of the rim. The lip is thickened. FIG. 4.

24. Fragment of floor of plate. This piece is broken away at the foot of the rim: its diameter here is 0·18: it seems to have had a high base ring with a diameter of about 0·09. Not illustrated.

25. Two fragments of a small cup or jug. Squat body, about 0·10 in diameter at the widest point. Flaring rim. Round the shoulder, two parallel incised lines. Traces of glaze inside and outside. FIG. 4.

26. Fragment of body of jug. D. at widest point 0·11. Shallow body, turning sharply at the shoulder. Below the shoulder the body is covered with a fairly well-preserved dark grey glaze, and the wheelmarks have not been smoothed off: above, it is plain. At the shoulder, spring of small vertical strap handle. FIG. 4.

27–30. *Red-Glazed Ware.*

Several fragments of red-glazed pottery were found. The clay is yellowish-brown, smooth, rather soft and without mica. The glaze is of poor quality, and appears to have been smeared on rather carelessly with a brush. Prof. Henry S. Robinson of the University of Oklahoma, who has been studying the finds from the American excavations in the Athenian Agora, has kindly examined these pieces and informs me that they cannot be ascribed to any of the major places of manufacture of red-glazed pottery. The form of our vases he regards as definitely Hellenistic and not Roman, but this may be due to the conservatism of the local potters.

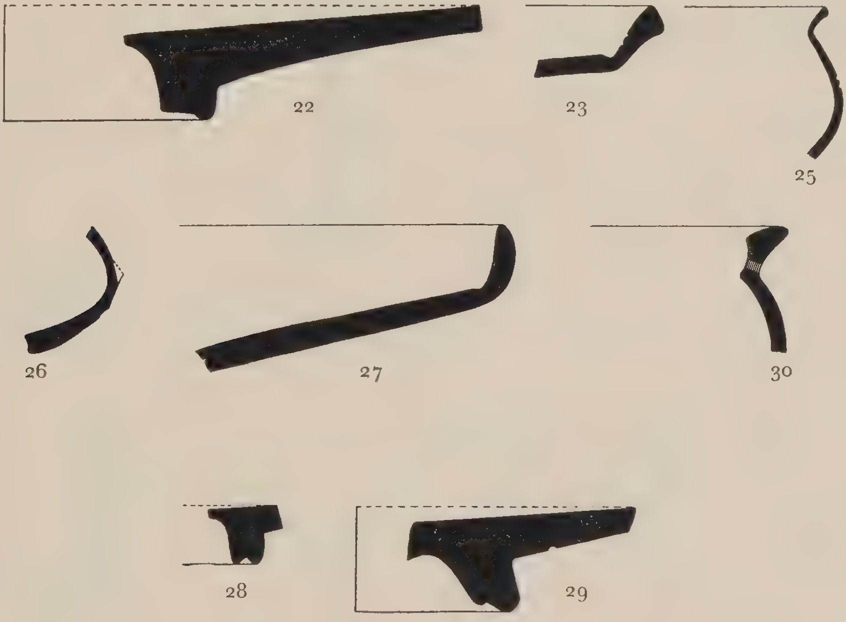

FIG. 4.—GREY AND RED-GLAZED WARE. (Scale 1/2.)

27. Fragment of large plate. D. 0·32. Floor sloping slightly upwards, divided by a slight nick from the high rim. Shape roughly similar to Thompson E 151. FIG. 4.

28. Fragment of base of plate. D. of base ring 0·105. High base ring with groove round foot. Traces of rouletting inside. FIG. 4.

29. Fragment of base of plate. D. of base ring 0·09. Incised circle on underside, just outside base ring. FIG. 4.

30. From lip of closed vase. The hole has glaze on the inside and is therefore an original feature, not a rivet hole made for repairs. FIG. 4.

31–33. *Lamps* (all wheelmade).

31. H. 0·035. D. of body, excluding nozzle, 0·055. Nozzle and part of body broken. Light brown clay: red-brown glaze, very badly preserved, inside and out. Flat base, slightly set off from sides; deep body: no handle: short nozzle: groove round filling hole. FIG. 5.

32. Fragment of body. D. 0·055. Pink clay: traces of red glaze outside only. Spherical body, not as deep as no. 31. Groove round filling hole. Fragments of at least two other similar lamps were found. FIG. 5.

33. Nozzle. L. 0·03. Light brown clay. No glaze. Considerable signs of burning.

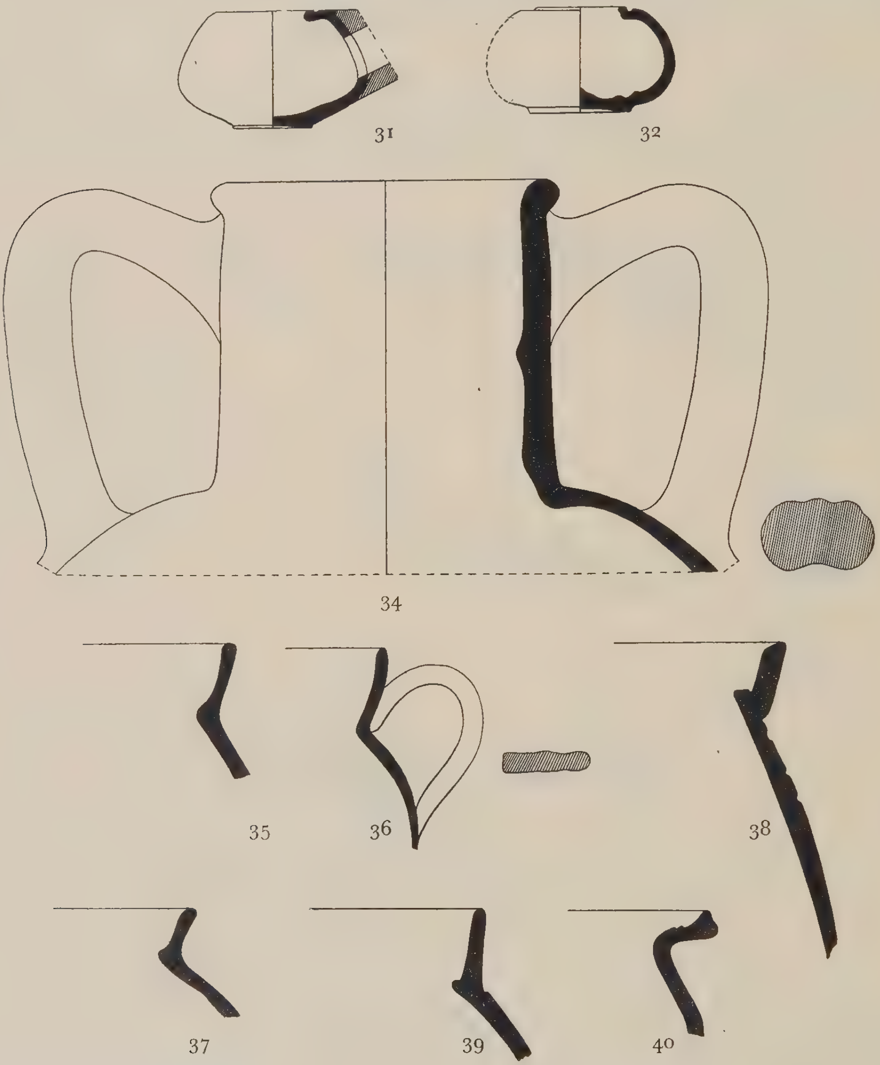

FIG. 5.—LAMPS, COOKING POTS AND AMPHORA. (Scale 1/2·2.)

All these fragments resemble Broneer's Type X [10] which he dates from the second half of the third century B.C. onwards. These particular examples, with their poor glaze and inferior finish (the wheelmarks on the bases have not been smoothed off), should be among the latest of this type. Local industry may have continued to produce lamps cheaply and quickly on the wheel and after old patterns. There is one lamp of Type X in Thompson's Group E,[11] but it seems to be rare at Athens: the lamps from Ligourio [12] are of Type XVI. Three very similar lamps (to judge from the illustration) were found in the latest of the Hellenistic tombs at Sparta excavated by Wace and Dickins.[13] This tomb (C III) contained a coin of Eurycles, ruler of Sparta at the end of the first century B.C., though as there were three skeletons in C III the grave goods found with them are not necessarily all of one period.[14] At all events this type of lamp would appear to have continued in use at Sparta well into the first century B.C., if not later. There does not seem to be any evidence for lamps of Type X at Corinth in the Roman period, but Corinth was then a Roman colony and imported Italian lamps.[15]

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[10] *Corinth* IV ii 49 ff.

[11] E 88.

Coarse Ware.

34. *Amphoras.*

Fragments of at least four amphoras were found lying about the storeroom: they had probably been smashed before the roof fell in, as the pieces were scattered; in consequence it has not been possible to reconstruct a complete amphora. The handles and bases were all of the same type. See FIG. 5.

Neck and handles. From inside Pithos A. H. of neck 0·09; D. of rim 0·10. Coarse, gritty reddish clay, rim thickened. Three vertical grooves have been drawn down each of the handles: there is no other attempt at decoration.

Miss Virginia Grace has kindly informed me that she is not familiar with the type, which is probably local. Grooves down the handles seem to be a late feature, first growing common in the Roman period.

35–40. *Cooking Pots* (all wheelmade).

Numerous smashed cooking pots were found, mostly in the storeroom. The following sections of rims are illustrated in FIG. 5.

35. D. about 0·18. Coarse gritty clay, red inside, dark grey outside.

36. Handle from similar pot. Vertical strap handle. Width of handle 0·02. Down the middle of the handle runs a slightly raised vertical ridge.

37. D. about 0·13. Coarse red gritty clay, burned black in patches outside and round rim. Round the bottom of the inside of the lip is a slightly raised ridge, which is presumably intended to give support to the edge of a lid. This feature is more clearly marked in the next two examples.

38. D. about 0·30. Coarse red clay. No marks of burning. Three parallel incised lines running round the shoulder below the junction of the rim with the body.

39. D. about 0·20. Coarse red clay. No marks of burning.

40. D. of rim about 0·19. Coarse red clay containing traces of mica. Two incised lines close together round inside of lip.

41–43. *Cake Stamps* (PLATE 37, *d*).

41. D. 0·105. H. 0·05. A heavy, roughly conical, lump of light brown, gritty clay. The design on the base seems to have been made partly with stamps, partly by incision. It is carelessly executed and asymmetrical. A fuller description and an attempt to interpret the scene are given in the Appendix, pp. 168–70 below.

42. Fragment with roughly incised design. D. 0·12. Coarse gritty clay. Less than a quarter of this piece was found. It is disc-shaped, not conical: one of the marks on it resembles a small crescent, but the others are no more than the ends of whatever design was on the lost part. FIG. 6.

43. Fragment. D. 0·11. Light red clay. The design is far more neatly executed, being apparently moulded all in once piece from a metal original. At the same time it is far less puzzling and interesting. There appears to have been some floral design in the centre, outside which was a ring of small palmettes.

A somewhat similar stamp, purchased locally, has a diameter of 0·102: in the centre is a quadruple palmette and cone pattern, separated by three circles, the innermost rouletted, from a complicated palmette and tendril pattern. Round the rim is another rouletted circle. This stamp differs from no. 41 not only in pattern but in form, consisting of a disc of clay 0·007 m. thick, having in the centre of the back a tabular clay handle 0·02 m. high and 0·03 in diameter.

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[12] Scranton 529.

[13] *BSA* XIII 155 ff., especially fig. 6 *f*, and table at bottom of 163.

[14] *Ibid.* 163.

[15] *Cf.* Thompson, ‘ Terracotta lamps ’ (from the Athenian Agora), *Hesperia* II, esp. 204.

The practice of stamping cakes or small loaves with patterns, especially at religious festivals, continues to the present day, but it is a very ancient one. Hellenistic cake stamps have often been found.[16] But I do not know an exact parallel to no. 41.

Loomweights.

Almost all the loomweights found were disc-shaped. Their diameter varies from 0·08 to 0·11 m. and their thickness from 0·02 to 0·03, and all have two suspension holes. They are made of coarse reddish clay. On the sides of one or two are small oval impressions, apparently from seals, but no sort of design can be made out. There were two pyramidal loomweights.

1. H. 0·075. Base 0·03 square. Single suspension hole.
2. Rather broken. H. as preserved 0·125. Base 0·05 × 0·065. Single suspension hole.

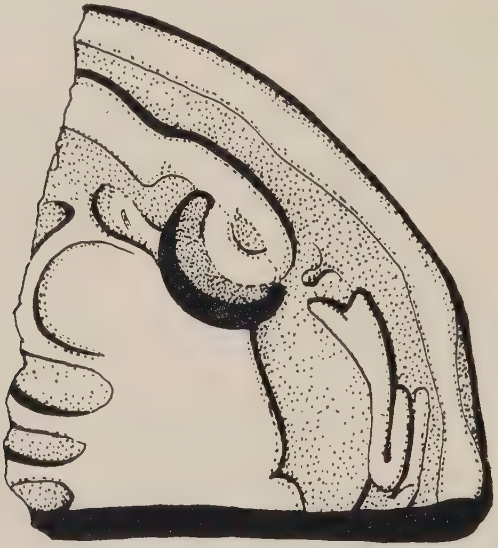

FIG. 6.—CAKE STAMP, NO. 42. (Scale 1/1.)

Both are made from the same sort of coarse clay. According to Miss Davidson and Mrs. Thompson[17] disc-shaped loomweights were known in Athens in the fifth and fourth centuries B.C., became more common in Hellenistic times, predominate on some Hellenistic sites, and died out with the disappearance of the vertical loom at the end of the first century A.D.

METAL OBJECTS

1. Bronze handle in the form of a goose's head and neck. Length 0·18. Hollow cast: the feathers and details of the eyes, nostrils, and beak are engraved. The thickness of the metal is 0·02 at the base of the neck, but tapers away gradually towards the head. It was very thin on the underside of the beak, and here there is a small hole: otherwise the piece is excellently preserved, except for some oxidised patches on the left side of the head and neck. It is covered with a beautiful green patina. The shape of the attachment at the base of the neck suggests that the handle belonged to a shallow bowl or *patera*: the flat space on the top of the attachment indicates that this was lidded: the two rivets on either side of this space may have secured the lid. PLATE 38, *a*, *b*.

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[16] *E.g.* Wiegand and Schrader, *Priene* 465 ff. Deonna, *Délos* XVIII 230 ff. and pl. LXXVI. Flinders Petrie, *Naucratis* I (1884–5), 45 and pl. XXIX.

[17] *Hesperia* Supplement VII, 'The Small Objects from the Pnyx' 79.

Although this piece was discovered before the main excavation, I do not regard it as a 'surface find'. Only the tip of the beak was showing, the neck being wedged between the fallen stones of the house at the south-east corner of the Storeroom. There was no deposit farther up the slope from which it could have been washed down, and I am quite certain that it formed part of the contents of the house. It does not, of course, follow that it is contemporary with the other contents, and indeed the various scholars who have kindly given me their opinions on it [18] are unanimous in assigning it to the Late Archaic period. Such a piece may have been handed down as an heirloom, or—more probably, as the family that lived in this cottage was certainly not a wealthy one—discovered in the fields, as many antiquities are discovered at this day or, if we assume on the strength of the cake stamps that the house was a priest's, it may have belonged to his temple.

I cannot find an exact parallel to this handle. The treatment of the feathers recalls a '*Stilisierter Vogel*' from the Temple of Zeus in Olympia.[19] That this piece is indeed early in date becomes more probable when it is compared with that illustrated beside it,[20] PLATE 38, *c*, *d*.

This is a small patera-handle ending in a ram's head. Total length 0·14. Length of handle alone 0·105; of head alone 0·035. D. of shaft 0·017. The handle consists of a cast copper cylinder with five shallow flutings running along each side: at the top and bottom a space about 0·01 broad is left unfluted. At each end the shaft is encircled by a raised band. The shaft is terminated by a ram's head: details of the horns and the groups of small circles which represent the wool on the top of the head and throat have been touched up after casting. The metal plate by which the handle was attached to the patera is in one piece with the shaft, but was beaten out and decorated with a curvilinear pattern after casting. Its corners are slightly broken. The four holes for the rivets by which it was fastened to the patera are visible in the photograph (PLATE 38, *d*). The metal is very coppery in appearance. There is no patina, but on the top of the shaft are traces of gilt.

This type of handle was common throughout the civilised world during the Roman Imperial period. There is a fine example on a patera in the British Museum [21] from Boscoreale near Pompeii; inside the bowl is a representation of Scylla destroying the companions of Odysseus. From Borsu, Belgium,[22] '*une magnifique patère en bronze doré avec manche cannelé terminé par une tête de bélier, décorée au centre d'un bas-relief représentant un taureau dans l'attitude de combat*'. Others come from Thrace,[23] Egypt,[24] and Olympia,[25] and there are many examples in museums; I do not attempt to give a full list.

Gjødesen [26] suggests that these handles may be connected with the archaic anthropomorphic type which shows a youth standing on a ram's head, but it seems impossible to prove that they are directly derived from it.[27] I have reluctantly abandoned the idea that they are intended to represent battering-rams, though a terracotta patera in Berlin is decorated inside with moulded arms and armour.[28] Rams are not the only animals whose heads are used on these handles: dogs and wolves are also found,[29] and even satyrs.[30] Terracotta paterae with similar handles have been found in late Roman contexts in the Agora at Athens, showing that the type had a long life.[31] Our piece is probably late, and seems to approach most closely to the Egyptian examples mentioned above. This has been a digression, but at least it helps to establish the early date of the goose by showing that it is not typical of the age to which the house belongs.

2. Cast bronze cockle-shell. L. 0·045. Good condition; fine green patina like that of the goose; all the bronzes are covered with this patina, and I shall not mention it particularly in describing the remainder. The casting was excellently done, and the thickness of the bronze (about 0·003) is uniform. The shell is obviously carefully copied from nature. Cockle-shells are very common in the soft rock of which the mountains of the North Peloponnese are formed, and the Achaean bronzeworkers, to whose activities Professor David M. Robinson has called attention in *AJA* XLVI 172 ff.,[32] would not lack models. It is not improbable that all these bronzes were made locally, though I cannot prove it. FIG. 7, *a*.

3. Cast bronze cockle-shell. L. 0·045. A replica of no. 2, slightly oxidised on the back. This shell contained traces of a lead filling which were removed in the cleaning. FIG. 7, *a*.

4. Cockle-shell. L. 0·05. This piece is merely a dome-shaped lump of lead about 0·02 m. high with a flat roughly circular bottom about 0·05 m. in diameter. Its upper surface has been roughly scored to represent the ridges on a cockle-shell and then covered with a thin bronze plate, which is now broken at the top of the shell. It is difficult to see what purpose it can have served: perhaps the three cockle-shells were the three feet of a bronze bowl; Hellenistic pottery bowls with cockle-shell feet were found at Priene [33] and Sparta.[34] Another from Athens [35] rests on three Dionysus-heads. We might suppose that the bowl originally had three identical cockle-shells, but that one was lost or broken and replaced by an inferior copy (no. 4). This explanation would account for the lead in nos. 3 and 4, which would help to keep the bowl from upsetting. But there is no sign that any of the cockle-shells were in fact fastened to anything; moreover no. 3 was found in Pit A, no. 2 in Pit B, and no. 4 at the bottom of Pit C. Therefore if they were part of one bowl we must suppose that just before the house was abandoned they were broken off and tossed into the three pits. FIG. 7, *a*.

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[18] I am particularly obliged to Dr. Emil Kunze and Mrs. Karouzou.

[19] Furtwängler, *Olympia* IV, no. 970, pl. LVII.

[20] Formerly part of the Empedocles Collection. Now in the National Museum at Athens. I am indebted to Mrs. Karouzou for permission to publish it.

[21] Walters, *BMC Bronzes* no. 882.

[22] Renard-Grenson in *AA* 1908, 267.

[23] *AA* 1941, 127, fig. 6.

[24] Edgar, *Greek Bronzes in the Cairo Museum* 27.746–27.748. The attachment of 27.747 resembles that of our handle, but the tendrils are more elaborately and carefully executed.

[25] Furtwängler, *op. cit.* no. 1280: if this piece is complete, the shaft is a very short one.

[26] *Acta Archaeologica* XV 101 ff., especially 167, 168.

[27] I have been unable to obtain access to the article by Radnóti (*Dissertationes Pannonicae*, Ser. II, no. 6 (1938)) to which Gjødesen refers.

[28] Zahn in *Berliner Mus. Berichte* XXX (1909) 263 ff. (also *AJA* 1910, 246, fig. 4). Zahn mentions replicas in Göttingen and Alexandria.

[29] *E.g.* Richter, *Catalogue of the Greek, Etruscan and Roman Bronzes in the Metropolitan Museum*, no. 444.

[30] E.g. *Belleten* IV, pl. XLIX, fig. 43.

[31] Compare also Waage, *Antioch on the Orontes* IV, fig. 24, no. 11 ('Middle Roman').

[32] Quoting Pindar *Nem.* X 45–8.

[33] Wiegand and Schrader, *op. cit.* 396, fig. 526 no. 7.

[34] Wace and Dickins, *op. cit.* 165, fig. 9.

[35] *AM* XXVI 76.

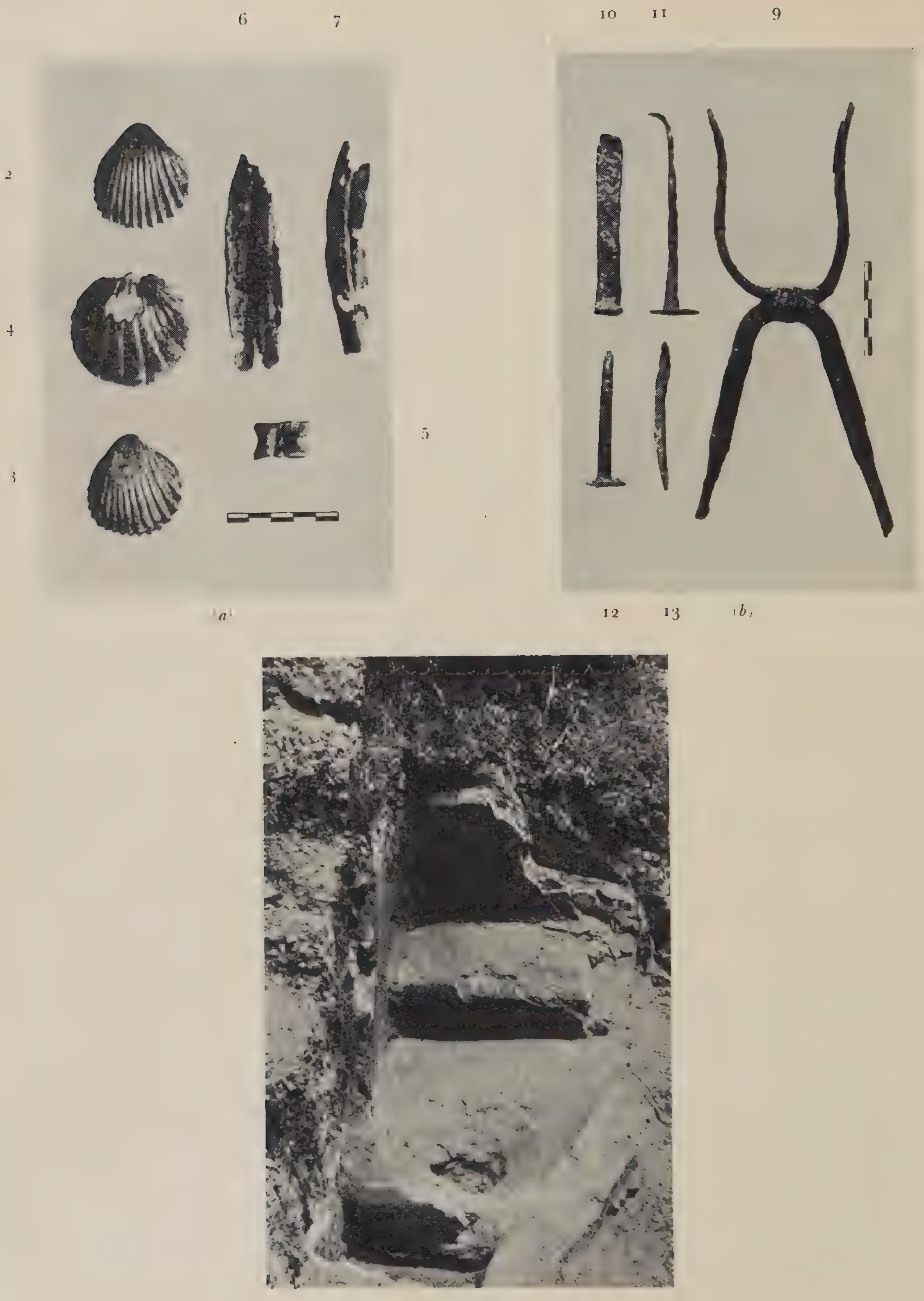
6
7
10
11
9
2
4
5
3
(a)
12
13
(b)
(c)

Fig. 7.—(*a*), (*b*) Metal Objects. (*c*) The Bath from the West.

Small bronze cockle-shells are not uncommon:[36] most of them are rather larger than ours, and may have been used as small dishes, which our no. 4 at any rate cannot possibly have been. On the whole I think it most probable that our pieces were the feet of a bowl. I do not think that the goose was the handle of the same vessel, though this is possible.

5. Bronze knucklebone. L. 0·025. Cast solid. The quality of the work compares well with that of Cockle-shell no. 2, together with which it was found. It is rather heavy to throw, and usually falls in the position shown in the photograph. I do not believe that it was actually used for gambling. FIG. 7, *a*.

6, 7. Two thin strips of bronze, each about 0·10 long, probably from the rim of a small bowl. The left piece in the photograph (FIG. 7, *a*) shows what appears to be the outside, the right, the inside: both are too distorted for the shape and dimensions of the bowl to be recoverable. There is a narrow ridge about 0·015 m. below the rim and parallel to it, beaten from the outside in. The holes visible in the photograph may have been rivet holes, and I am not even certain that these pieces are from a bowl. At all events they are too flimsy to have belonged to the same piece as the cockle-shells.

8. Iron mattock-head. Length 0·235. Diameter of socket for shaft 0·04. This instrument originally had three prongs, of which one only is preserved. The fields round Mamousia are too steep to plough, and are cultivated with mattocks at the present day, though the modern type has a single broad blade. A head like ours, but with two prongs, was found at Priene,[37] and the excavators say [38] that they had seen similar tools used in cultivating the vineyards in the neighbourhood. I have not noticed them myself. The wine of Keryneia had a reputation in antiquity, though not altogether a favourable one.[39]

9. Iron tongs. L. as preserved 0·24. Both ends of the handles are broken. The two arms are fastened by a large rivet, which is visible in the photograph. FIG. 7, *b*.

10. Small iron wedge. L. 0·10. FIG. 7, *b*.

11, 12, 13. Iron nails. The largest is 0·11 long and bent at the tip, the other two are broken. They have large flat heads. FIG. 7, *b*.

COINS

Three small bronze coins were discovered. Mrs. Varoucha has kindly identified two of them for me. I give her notes together with the exact spot where each was found.

1. Sicyon. 251–146 B.C. Æ 17. Dove r. feeding. Rev. Tripod-lebes in wreath. *BMC Peloponnese*, pl. IX 15. On the floor near Pithos A.

2. Greek. Second century B.C. Worn. Near the south wall of the stable in the black earth.

3. Athens. Imperial Times. Æ 17. Head of Athena to r. Rev. Demeter standing in car drawn by winged serpents. *BMC Attica*, pl. XVII 11. Found in the pit under Pithos B.

Mrs. T. L. Shear tells me that no. 1 dates from the latter part of the first century after Christ, if it is exactly of the type illustrated. But our coin is very badly worn. Mrs. Varoucha tells me she thinks it must have been in circulation for at least a generation before being lost.

CHRONOLOGY

The pottery found seems to belong to the first century B.C. Deep plates like our nos. 1–10 and bowls like our no. 11 seem to be common in Late Hellenistic times.[40] It is surprising to find the 'West Slope' style of decoration at so late a date [41] even in so debased a form. As for the bowls with relief decoration (nos. 18–21), Thompson has already shown [42] that bowls with long petals are among the latest Megarian bowls; even so, I can find no evidence that they continued to be made in the Roman Imperial period. Professor Robinson informs me that bowls like no. 21 have been found in the Athenian Agora; none is earlier than the sack of the city by Sulla. He believes them to be imports from Italy.

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[36] *E.g.* De Ridder, *Bronzes Antiques du Louvre* nos. 1024–1027. Babélon and Blanchet, *Bronzes Antiques de la Bibliothèque Nationale* nos. 1239–1241. Richter *op. cit.* no. 605 (a bronze *phiale mesomphalos* fluted to resemble a shell, from Cyprus).

[37] Wiegand and Schrader, *op. cit.* 389, fig. 501.

[38] *Ibid.* 391.

[39] Athenaeus I 57. For other references see Frazer's Pausanias, note to VII 25, 5.

[40] Our plates are clearly of the same class of table-ware as Thompson's E 1–21. But a comparison of the sections with Thompson's fig. 116 shows that they are by no means exactly the same; our out-turned, slightly thickened lips with incised grooves on the inside are quite different from his E 1 (heavy lip undercut on the inside) or E 19 and E 21, whose lips are hammer-headed in section. Waage's shape 17 (*Antioch on the Orontes* IV i 12 and pl. II) provides a closer parallel. Waage (*op. cit.* 15) says that shape 17 came in at the end of the Early Hellenistic period, but that 'the listing of shapes as Early Hellenistic does not of course imply that none of them lasted into the Late Hellenistic period'. Compare also Scranton, *op. cit.* 532 fig. 3*c*, Wiegand and Schrader, *Priene* 424 nos. 81, 82, also fig. 539 for bowls like our no. 11, but rather larger. Bowls of similar shape were also found by Wace and Dickins in Sparta (*op. cit.*, especially Table III on p. 164). Their fig. 8*a* comes from Tomb C III and may therefore be as late as the reign of Augustus or after, though the evidence from this tomb is not conclusive.

[41] But Wace and Dickins found 'two skyphoi with white or red and incised patterns' in Tomb C III (*op. cit.* Table III and fig. 10).

[42] *Op. cit.* 456.

I hesitate to try to date the red-glazed ware by comparing it with the superior, widely spread fabrics which it is presumably imitating; it seems to me that the local potter made no attempt whatsoever to keep abreast of the fashion. Since he did not use the Pergamene technique, he was not in direct touch with the makers of this pottery.

I have already discussed the date of the lamps.

The presence of a coin of the Roman Imperial period in the ruins is best accounted for, in my opinion, by supposing that the house, after being abandoned, was left to fall gradually into decay and was visited by treasure-seekers or inquisitive travellers about the end of the first century after Christ. It is even possible that it continued in use as a tool-shed and store for more than a century after it ceased to be inhabited as a dwelling: a farmer owning land in the coastal plain and on the hill-slopes near Mamousia would find a storehouse near his upper farm convenient.

It seems quite certain, even if allowances are made for the conservatism of local potters, that none of the pottery (except the amphoras, which cannot be closely dated) can be as late as the end of the first century after Christ.

As for the circumstances in which the house was abandoned, there was, as I have said already, no obvious sign of violence. And nothing was found which was not broken and useless; even the bronzes would have less value in the eyes of an ancient peasant than in those of a modern antiquary. I have therefore formed the opinion that the inhabitants left peaceably, taking with them most of their goods (for example, all the farm tools except one broken mattock: I find this a strong argument that the house was not looted; looters would probably have had no use for agricultural implements and left the lot).

What was too bulky to move, like the pithoi, or too cheap to bother about, like the pottery, some of which may have been already broken, they left behind. Many other houses in Keryneia seem to have been given up at the same time, to judge by the surface pottery: the site is an inconvenient one in times of peace, though very strong. Perhaps in the Roman period people preferred to live nearer the coastal plain.[43] Keryneia still existed in Pausanias's time,[44] but I find it easier to understand his movements between Keryneia and Bura if we suppose that he did not go as far inland as the walled city near Mamousia. I would suggest that the ancient remains now known as the 'Helleniko', on the north edge of the Keryneia plateau, may be those of his sanctuary of the Eumenides. In the church of Mamousia are preserved the plinth, feet, and part of the drapery of a marble statue said to have been found here. The statue was a draped female figure, about half life size. Its style is archaistic, and it might quite possibly be one of the statues of priestesses which Pausanias saw.[45]

APPENDIX

The Cake Stamp (no. 41) [46]

The centre of the design, which is rather off the geometric centre, is a circular impression 0·03 m. in diameter, in the middle of which is a punch mark 0·01 m. long: this has been modelled roughly to the shape of a human head, but no features are indicated. Radiating from the upper part of this are twelve short incisions. Suspended from the lower edge of the circular impression is a square of side 0·015 m., lightly stamped in the clay. To either side of this is a punch mark in the shape of an isosceles triangle, with sides of about three-quarters of a centimetre. The bases of these triangles are horizontal, and the inside lower angle of each touches the middle of one of the vertical sides of the square. Above their apices are small marks of doubtful significance. At the bottom are three small human figures lightly incised in the clay. All are standing. That on the left faces to the right and appears to be wearing a long trailing robe. It is passive. The other two figures seem to have their backs towards the observer (*i.e.* to face the central circle): the middle one raises both hands in an attitude of prayer; the right-hand one raises the right hand only, the left being extended at an angle of forty-five degrees downwards. There are traces of what may be another figure in the square below the central circle, but they are not at all clear. On either side of this central group a wide, deep incision extends from the bottom edge of the stamp to a point about level with the centre of the circle. These marks seem to be made with a pointed instrument: their tops taper and waver, and Mr. Kenna suggests that they are probably torches. To the left and right of these are figures or symbols which are presumably complementary to the main scene On the right is a short vertical mark, rectangular at the top. Above it, on a level with the head in the circle, is a circular punch mark rather over a centimetre in diameter with a slight groove round its edge. A similar punch mark occupies a corresponding position to the left of the main scene. To the left of it again, near the edge of the stamp, is what appears to be a draped and veiled female figure about four centimetres tall. None of her features can be distinguished, and it is uncertain therefore in which direction she is facing: one arm is raised towards the edge of the stamp. To her right is a symbol or implement shaped roughly like an obtuse angle, of which one arm extends to the right and slightly upward, the other downward and to the left. Above the upper arm are three short vertical marks. Below this instrument (*i.e.* below and to the right of the female figure) is a shallow rectangular impression, apparently stamped with the same stamp as the square below the central circle, though it is not itself a square, as its right edge is cut away by the left-hand torch. Within it are, to the left, a slight vertical mark, and to the right of this a small circular punch mark. Over all is a canopy consisting of two semicircles apparently punched with an instrument shaped like a tube split along its length and rather thickened at the rim: on either side of and below these are quadrants punched with the same implement: these are cut by the edge of the disc. The semicircles are separated from each other and from the quadrants by small circular punch marks. In the right-hand semicircle is a circular punch mark like those which flank the two torches: in the left is a hook or sickle-shaped symbol. At the very top is a wreath or branch, probably either of palm or olive. The stamp is not painted or glazed in any way: the discolorations visible in the photograph are incrustations.

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[43] After the War of Independence against the Turks many of the hill villages in the Peloponnese were partly abandoned, for example, Peristera near the Styx.

[44] VII 25, 5 ff.

[45] VII 25, 7.

[46] The Rev. V. E. S. Kenna and Mr. R. V. Nicholls have examined a cast of this stamp and a photograph and made many valuable suggestions about the nature of the objects depicted: the credit for making sense out of this stamp belongs to them, but if my interpretation of its religious significance is wide of the mark, the fault is entirely mine.

That the scene is religious there can be no doubt; the central feature clearly shows the adoration of a god by his worshippers. And I assume that this scene was stamped on sacred loaves or cakes for use on some ritual occasion.[47] As I have already said, I can find no exact parallel. But there is a curious series of stamps, mostly from Taranto,[48] upon which are impressed numbers of different and apparently unconnected symbols. These stamps resemble ours and differ from the usual cake stamps in that the designs on them are made up of a large number of small separate stamps and were not impressed on the clay all at once from an original complete design. There, however, the resemblance ends; the objects (distaffs, crescents, amphoras, torches, birds, wheels, sheep, hands and so forth) stand in no very obvious relation to one another; they may have a mystical connection, but this has yet to be explained satisfactorily, and even those which are recognisable as attributes of gods suggest a bewildering number of deities.[49] A further difference between these South Italian stamps and ours is that many of them have short, perforated handles on one side. But whatever they may be, I feel no doubt about the unity, purpose, and religious significance of our design.

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[47] The evidence that these clay stamps were used on sacred cakes is that they were clearly used for stamping something; this something was perishable, or at all events has not survived, though the stamps have in large numbers, and there is plenty of literary evidence (a little of which is given below) for the use of cakes of various sorts at religious festivals. Of course not all the stamps are obviously religious in significance.

[48] Sir Arthur Evans in *JHS* VII 44 ff. first identified them as 'moulds for sacred cakes'. McDaniel (*AJA* XXVIII 24 ff.) gives a useful collection of illustrations, but calls them merchants' seals.

The identity of the god and the nature of the ceremony are not so certain. The radiate head in the centre might well be Apollo. At the altar of Apollo τοῦ γενέτορος in Delos the only offerings were wheat and barley and πόπανα laid on the altar without fire.[50] But it is hard to explain the other figures and objects as attributes of Apollo; moreover, it seems strange that a cake which was a sacrifice and nothing more should have a scene like this stamped on it. At the Diasia the Athenians sacrificed to Zeus Meilichios cakes moulded in the form of animals;[51] it seems inappropriate to offer to the god his own image and that of his worshippers. Possibly the bread marked with our stamp was used in some sort of communion ceremony belonging to one of the mystery religions. (There seems nothing to connect the design with the worship of the Eumenides, whose sanctuary is the only one mentioned by Pausanias at Keryneia.)

The round impression under the right-hand arch of the canopy and the two similar impressions on either side of the tops of the torches may be meant for cymbals: this suggests the worship of Attis. The hooked object under the left-hand arch would then be the instrument of his self-mutilation and the figure on the left (whose superior size and position marks her off from the worshippers below) would be the Great Mother, the object in front of her being ' shorthand ' for her chariot. However, her peaceful attitude hardly suits,

> iuncta iuga resolvens Cybele leonibus
> laevumque pecoris hostem stimulans.

And the lions and chariot are not actually shown. Cook[52] illustrates a marble statue of Attis, dating from the time of Hadrian, whose head ' twined with a garland of pine-cones, almonds, pomegranates, poppy-heads and flowers, wears a Phrygian cap which is encircled below by five rays . . . '. But I do not know an Attis with a radiate head like the one on this stamp. Mr. R. V. Nicholls suggests that the two triangles on either side of the square below the central circle may symbolise the Dioskouroi. But I am unable to explain the rest of the design if this is so. I can see no trace of Bacchic symbolism.

I myself think that the head in the centre may be Triptolemos. Triptolemos is often shown wreathed[53] or with corn-ears round his head;[54] moreover, Prof. A. B. Cook[55] shows good reason for connecting him with the disc of the sun. The figure on the left is then Demeter with the plough (the object in front of her looks much more like a plough than a chariot); for Demeter with the plough compare the crater from Cumae.[53] The two torches suggest Persephone, but Persephone herself is missing, unless she is the figure (if there is a figure) in the central square. She should, of course, be balancing her mother on the right of the composition. The part of the design to the right has been rather cramped, but I cannot find the figure of a goddess there, and one can hardly suppose that such an important person would be left out for want of space. Perhaps her torches were thought to be enough. The hooked object under the left arch of the canopy will be a sickle, which is appropriate enough, but I cannot account for the circular punch marks; they can hardly represent the wheel (or wheels) of Triptolemos's famous chariot. Triptolemos is not specially connected with Keryneia, but he visited Patras.[56]

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[49] For example, on the stamp published by Sir Arthur Evans (*op. cit.*) there are: a thunderbolt for Zeus, a trident for Poseidon, the torches of Persephone, the club of Herakles, the lyre of Apollo, a caduceus for Hermes, amphorae for the Dioskouroi, and a lot of unexplained symbols. This multiplicity of gods is one of the reasons which makes McDaniel regard these stamps as compound seals.

[50] Diogenes Laertius VIII 13, quoting the Δηλίων πολιτεία of Aristotle; Iamblichus *v. Pyth.* 25, 35; Cook *Zeus* II 223 n. 3. Compare the offering of cakes to Zeus Hypatos outside the Erechtheum (Pausanias I 26, 5). *LS*^{9} translates πόπανα as round cakes used in sacrifices.

[51] Scholiast on Thucydides I 126; Cook *op. cit.* II 1138 n. 2.

[52] *Op. cit.* II 297 fig. 189.

[53] *E.g.* on a Attic red-figure crater of about 450 B.C. from Cumae, Cook *op. cit.* I, pl. XX.

[54] *E.* . on an Apulian amphora *ibid.* pl. XIX.

[55] *Ibid.* 211 ff.

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[56] Pausanias VII 18, 2.

SOME PROTOCORINTHIAN VASE-PAINTERS

Johansen in *Vases Sicyoniens* and Payne in *Necrocorinthia* and *Protokorinthische Vasenmalerei* [1] isolated a number of artistic personalities, but this was, or seemed at that stage, incidental to their main object, the ordering of Protocorinthian and ‘ Corinthian ’ pottery by phases of chronological development. Payne left further work on painters in manuscript notes, and we [2] and others [3] have done something in the same line, but so far there has been no attempt to see the whole development of the style in terms of artistic personalities influencing one another (which after all it was), as has been done by Beazley for Attic red-figure and black-figure, and by J. M. Cook for Protoattic. If such a view can be achieved it modifies the necessarily rather schematic (even Procrustean) division into chronological phases, and gives a more organic view of the development. For the ‘ Corinthian ’ period it is a somewhat dispiriting task, though even there we believe that it would be worth doing, if only to help our understanding of the interrelation of Corinthian and Attic. In this article, however, we are concerned only with Protocorinthian, whose general level is very high, and the principal artists of superlative quality; the isolation of painters here needs no apology.

Earlier work on these lines was impeded by the fact that the miniature side of Protocorinthian has been so much better preserved and published than the parallel and contemporary ‘ big style ’. The balance has recently been partly righted by Kraiker's publication of material from Aigina; [4] and the other most important body of Protocorinthian pottery—the votive deposit from the Temple of Hera Limenia at Perachora—has already been prepared for publication by Dunbabin. We have made full use of the Perachora material in this article, and the substantiation of some of our conclusions will have to await the appearance of *Perachora* II. There is a third, unpublished, collection of Protocorinthian ‘ big style ’ vases in Berlin, from Aigina. We have included a few of these, of which Robertson made tracings and notes in 1936. Most vases in the lists are known to one at least of us in the original and to both (all of course to one or other) in reproduction. Outside the lists we have mentioned a few vases known to neither of us but connected in Payne's notes or the publications of others with vases in our lists.

We begin with the Early Protocorinthian aryballoi decorated with animals in outline and silhouette, because they make the first break with the anonymity of Corinthian geometric and are the beginning of the Protocorinthian figure style. They lead on to the larger vases of the Cumae Group—work of one shop and mainly no doubt of one hand—from which the Toulouse Painter develops, and through an imperfectly mapped tract to the black-figure aryballoi of the Corneto and Ajax Painters. These three artists, with the slightly younger Aetos Painter, are the creators of the Protocorinthian black-figure style and perhaps of the polychrome style also; both styles are brought to perfection by their pupils, the Hound and Bellerophon Painters and the Boston, Sacrifice, and Macmillan (= Chigi) Painters. The artists of this ‘ classical ’ generation tend to fall into two groups: ‘ big style ’ black-figure painters and polychrome miniaturists; but the distinction is probably sharper to us than to them. The Sacrifice Painter is an example of an artist with one foot in either camp, and we have little doubt that greater knowledge would show other artists in a similar light. The youthful works of the Head-in-Air Painter show clear influence from the Sacrifice and Macmillan Painters on the one hand and the Bellerophon Painter on the other, suggesting that they all sat in one shop; and so, in the generation before, the Toulouse and Corneto Painters must have done, if indeed they are not one man. We have of course left out a great deal of the material, but we have the impression that there were not very many workshops producing figured vases during the Protocorinthian period, the majority concentrating on linear. One of the most significant elements in the change from Protocorinthian to ' Corinthian ' was the turning of these other workshops to the mass-production of figured vases. The other most important aspect of the change—the trend to conventionality—is already apparent in much Late Protocorinthian: not only in the small fry of our last lists but also in the Head-in-Air Painter, an artist strongly rooted in the finest Middle Protocorinthian traditions.

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[1] Also *CVA* Oxford II and *Perachora* I.

[2] In particular, *JHS* LXXI 63–7 (Dunbabin, using Payne's notes); *BSA* XLIII, especially 55–7 (Robertson).

[3] References in the lists. See also Postscript.

[4] Kraiker, *Aigina, Die Vasen des 10 bis 7 Jahrhunderts.*

The ten painters named above illustrate and, as far as we can see at present, largely determined the main lines of development in Protocorinthian vase-painting. We have included others: the Telestrophos Painter because, though still very obscure, he was obviously important and is a warning example of the surprises that may at any time turn up;[5] the Round Dance Painter for his oddity; the Painter of the Corinth Hare-hunt for his quality; the Leiden Painter because he forms such a clear link between the MPC ' big style ' of the Bellerophon Painter and one current in Transitional vase-painting;[6] and the rest because, though trivial in themselves, they form distinct groups and so help to clear the ground.

Except where otherwise stated the vases in each list are arranged as nearly as possible in chronological order. We give no descriptions of published vases, nor of those from Perachora whose publication is imminent.

Aryballoi with outline figures, etc. EPC.

A.

1. Boston 03.810: *VS* pl. 5, 4; Fairbanks, pl. 41, 391; *NC* pl. 1, 3; *PV* pl. 5, 2; Matz, *Gesch. gr. Kunst* I, pl. 143 a.
2. Naples, from Cumae: *MA* XXII, pl. 42, 3; *VS* pl. 5, 5; *PV* pl. 6, 6–8.
3. Naples, from Cumae: *MA* XXII, pl. 42, 2; Pfuhl, *MuZ* fig. 30; *PV* pl. 6, 2–5; Buschor, *Gr. Vasen* 25, fig. 27; Lane, *Greek Pottery*, pl. 13 B; Kübler, *Altattische Malerei*, 13, fig. 6; Matz, *Gesch. gr. Kunst* I, pl. 143, c, d.
4. Naples, from Cumae: *MA* XXII, pl. 46, 4; *VS* 53, fig. 31; *PV* pl. 6, 1.
5. Syracuse, from Syracuse: *MA* XXV, 547–8, fig. 133, centre.
6. Athens, from Argive Heraion: *AH* II, pl. 66, 11 and p. 146, fig. 86.
7. Mykonos, from Delos: *VS* pl. 5, 7; *Délos* X, pl. 21, 150.

2–4, at least, should be by the same hand. To the same group, perhaps to the same hand as 2–4, belongs:

8. Oenochoe neck, Ithaca, from Aetos: *BSA* XLVIII, pl. 62, 963.

B. Silhouette Neck Group.

1. Syracuse, from Syracuse, grave 219: *NS* 1895, 137, fig. 14; *VS* pl. 14, 1; *NC* pl. 1, 2; *PV* pl. 5, 3; Buschor, *Gr. Vasen* 25, fig. 28; Matz, *Gesch. gr. Kunst* I, pl. 143 b; *BCH* 1952, 332, fig. 5.
2. Eleusis 786: *AE* 1889, 177.

Less close:

3. Naples, from Cumae: *MA* XXII, pl. 41, 3; *VS* pl. 5, 1; *PV* pl. 5, 5.

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[5] Another such is an unpublished vase from Aigina in Berlin: four frr. of a big kotyle with figures on a very large scale; (*a*) bearded face of wild aspect looking up to r.; (*b*) back of animal to r. with hairy or fleecy coat; above it, big stalked rosette and sharply bent elbow with hand resting on animal; (*c*) sharply bent neck and ears of same or similar animal: obscure remains to r.: big stalked rosette above; (*d*) part of spotted snake? *a–c*, escape from Polyphemos's cave? MPC II.

[6] See *JHS* LXXIII 185.

C. Bird Protome Painter.

1. Naples, from Cumae: *MA* XXII, pl. 43, 5; *VS* pl. 5, 3; *PV* pl. 5, 6.
2. Munich 6561, from Italy: *AA* 1929, 30, fig. 25 r, *CVA* III, pl. 142, 9.

D.

An aryballos with the same feeling as those in *A–C*, but not closely related, is the slightly later

Berlin 3409, from the Corinthia: *VS* pl. 5, 6 and p. 59, fig. 36; *PV* pl. 9, 3–4.

Other early aryballoi, intermediate between these and the Corneto and Ajax Painters, are:

Delphi: *FdD* V 155, fig. 640 *bis.*
Brussels A 2: Furtwängler, *Coll. Somzée*, pl. 38; *JHS* 1890, 179, fig. 2; *VS* 61, fig. 42; *CVA* I, pl. 1, 33.
Athens, from Argive Heraion: *AH* II 147, fig. 88; *VS* pl. 20, 3; *PV* pl. 9, 1–2.

With the last *cf.*:

Kotyle, Ithaca, from Aetos: *BSA* XLIII 15, fig. 6, no. 30; XLVIII 284.

The following seems to stand between the outline aryballoi and the Cumae Group:

Aryballos, Ithaca, from Aetos: BSA XLIII, pl. 13, 235 and p. 50, fig. 35.

Possibly also:

Stand, Ithaca, from Aetos: *BSA* XLIII, pl. 15, 225 and pp. 46, 48, figs. 32–3.

Cumae Group. EPC.

Vases from one workshop, probably mostly from one hand (see Toulouse Painter). Not in chronological order.

1. Oenochoe from Cumae: *MA* XXII, pl. 30; *VS* pl. 6, 1; *NC* 9, fig. 4; *PV* pl. 7, 3; Buschor, *Gr. Vasen*, 26, fig. 29; Matz, *Gesch. gr. Kunst* I, pl. 144 a.
2. Oenochoe from Cumae: *MA* XXII, pl. 31, 1; *VS* pl. 6, 2; *PV* pl. 7, 1–2; *Hesperia* XVII, pl. 73.
3. Oenochoe, Heraklion, from Afrati: *Ann.* X–XII 369, fig. 485.
4. Oenochoe fr., Athens, from Argive Heraion: *AH* II, pl. 64, 1 (cf. *NC* 9).
5. Oenochoe, Ithaca, from Aetos: *BSA* XLIII, pl. 9 and p. 35, fig. 21, no. 138.
6. Oenochoe, Ithaca, from Aetos: *BSA* XLIII 35, fig. 22, no. 139.
7. Oenochoe fr., Ithaca, from Aetos: *BSA* XLIII 36, no. 140.
8. Oenochoe fr., Ithaca, from Aetos: *BSA* XLVIII 315, fig. 28, no. 951.
9. Oenochoe fr., Corinth C 36.565: *Corinth* VII i, pl. 17, 129.
10. Oenochoe, Corinth C 40.362: *Hesperia* XVII, pll. 72–4, C 3. White on black.
11. Oenochoe fr., Aigina: Kraiker, *Aigina*, pl. 15, 210.
12. Kotyle fr., Aigina: Kraiker, *Aigina*, pl. 14, 188.
13. Kotyle fr., Aigina: Kraiker, *Aigina*, pll. 14 and D, 189.
14. Kotyle fr., Aigina: Kraiker, *Aigina*, pll. 14 and D, 197.
15. Kotyle fr., Aigina: Kraiker, *Aigina*, pl. 14, 198.
16. Kotyle fr., Aigina: Kraiker, *Aigina*, pl. 14, 199.
17. Concave pyxis fr., London 1912. 6–26.170 (*cf.* with 2).
18. Pyxis, Athens, from Argive Heraion: *AH* II 137 ff., fig. 69 *a–f*; *VS* 57, fig. 33; *PV* pl. 8.
19. Cup fr., Berlin, from Aigina: continuous motive round outside.

Related:

Oenochoe, Corinth: *Hesperia* XVIII, pl. 20, 30.
Oenochoe, Athens, Kerameikos: Kübler, *Altattische Malerei* 14, figs. 7–8 (late).

Another oenochoe of the Group is recorded by Weinberg, *Hesperia* XVIII 154, from the same well-group as the last but one.

1–4, Payne; 8, Benton; 9–10, Weinberg; 11, 13–16, Kraiker.

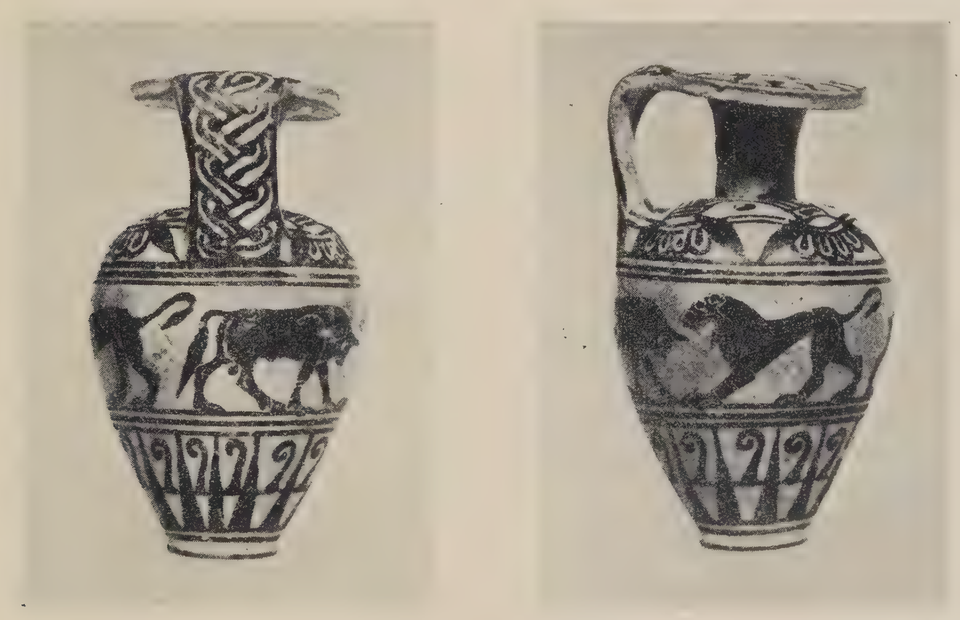
The oenochoe Ithaca, Aetos, *BSA* XLIII 36, no. 141, there ascribed to the Group, belongs to a class of oenochoe decorated with loop chains and figures of eight, motives found also in contemporary Attic and Cycladic as well as in Cumaean imitations of Corinthian.

The Corinthian examples are clearly poor relations of the Cumae Group, but probably not products of that workshop, or of a single workshop at all, but casual imitations from various sources.

Toulouse Painter. E–MPC.

Derives from Cumae Group, which might indeed be (in whole or in part) his early work. See also Corneto Painter.

1. Oenochoe, Ithaca, from Aetos: *BSA* XLIII, pl. 9, 142. Early.
2. Oenochoe, Toulouse: *PV* pl. 12; Matz, *Gesch. gr. Kunst* I, pl. 144 b.
3. Oenochoe, Syracuse, from Syracuse, grave 428: *NS* 1895, 167, fig. 57; *NC* 13, fig. 6.
4. Kotyle fr., Aigina: Kraiker, *Aigina*, pl. 32, 403.
5. Oenochoe, Athens, from Perachora: *Perachora* II, pl. 38, 129; part, *ILN*, 15 Nov. 1930, colour plate 1, top left. Late work, showing influence of next generation (Hound Painter).



ARYBALLOS, OXFORD 1935, 41.

Corneto Painter. MPC I–II.

Companion of Toulouse Painter, perhaps the same man working in miniature.

1. Plate, Athens, from Perachora: *Perachora* II, pl. 32, 736.
2. Aryballos, Rhodes, from Kamiros: *Clara Rhodos* IV 387 ff., figs. 443–4; *PV* pl. 9, 6–7.
3. Aryballos, Tarquinii: *VS* pl. 21, 2.
4. Conical oenochoe, Athens, from Perachora; *Perachora* I, pl. 24, 4–7.
5. Pyxis lid, Athens, from Perachora: *Perachora* II, pl. 47, 1115. Late.
6. Aryballos, Oxford 1935, 41. Bull between lions, goat. Base: spirals between rays, as on 3; shoulder: pattern similar to that on 3 but more elaborate. Late. FIG. above.

2 and 3 connected by Payne.

School-pieces: rough work by one hand.

1. Pyxis lid, Ithaca, from Aetos: *BSA* XLIII, pl. 13, 120 and p. 31, fig. 18.
2. Pyxis lid, Athens, from Perachora: *Perachora* II, pl. 47, 1113.

Ajax Painter. MPC I.

Related to Toulouse and Corneto Painters. Leads to Aetos Painter. One of the first painters of mythological scenes. Perhaps his early work is to be found in the Horsemen kotyle, Aigina: Hampe, *FgS*, pl. 40; Kraiker, *Aigina*, pll. 12–13, 191; Buschor, *Gr. Vasen* 27, fig. 32; Matz, *Gesch. gr. Kunst* I, pl. 145 a.

1. Aryballos, Syracuse (?), from Messina: *NS* 1929, 42, fig. 5 left.
2. Aryballos, Louvre *CA* 617, from Thebes: *VS* pl. 22, 1; *PV* pl. 10, 1; *CVA* VIII, pl. 14, 1–4; Matz, *Gesch. gr. Kunst* I, pl. 147 a.
3. Aryballos, Berlin inv. 3318: *VS* pl. 23, 1; *PV* pl. 10, 5–6.
4. Aryballos, Berlin inv. 3319: *VS* pl. 23, 2.
5. Aryballos, formerly Paros, from Paros: Benson, *Geschichte der Korinthischen Vasen*, pl. 1*a*. (See postscript.)
6. Aryballos, Boston 95.12, from Corinth: *AJA* 1900, pl. 6; *VS* pl. 22, 2; Fairbanks, pl. 41, 398; *PV* pl. 11, 1–5; Matz, *Gesch. gr. Kunst* I, pll. 146 b, 147 b.
7. Conical oenochoe fr., Aigina: *AM* 1897, 307, fig. 30; *NC* pl. 8, 8, no. 54; *PV* pl. 11, 6; Kraiker, *Aigina*, pl. 20, 265.

2–4, Johansen; 5, Benson.

Aetos Painter. MPC I–II.

Younger companion of the Ajax Painter. Leads up to Bellerophon Painter and Boston Painter.

1. Kotyle, Ithaca, from Aetos: *BSA* XLIII 15, fig. 5, no. 29.

1A. Kotyle, Ithaca, from Aetos: *BSA* XLVIII 284, fig. 18; probably from same vase as last (Benton).

2. Kotyle, Ithaca, from Aetos: *BSA* XLIII, pl. 14 and p. 16, fig. 7, no. 31; better, *BSA* XLVIII 284, fig. 17.
3. Aryballos, Athens, from Perachora: *Perachora* II, pll. 2 and 57, no. 27; *BSA* XLII 93, fig. 7.
4. Aryballos, Syracuse, from Syracuse, grave 85: *NS* 1893, 471; *VS* pl. 26, 5; *NC* pl. 1, 4; *BSA* XLII 97, fig. 8 *b*.
5. Aryballos, Syracuse, from Syracuse, grave 366: *NS* 1895, 156, figs. 43–4; *VS* pl. 29, 1.
6. Aryballos, London A 1052, from Nola: *AZ* 1883, pl. 10, 2; *VS* pl. 29, 2.
7. Aryballos, Germany, private coll.: boar and goat, goat? Below, frieze of rosettes and hooks, double rays; palmette chain on shoulder, dots on mouth, neck, handle. (Photograph in Payne Coll., British School at Athens; *cf.* with 5.)
8. Aryballos, Athens, Kerameikos: *AA* 1934, 205, fig. 3.

5 and 6 put together by Miss Lorimer, *JHS* 1912, 348 f., and by Johansen.

The following are perhaps late works, the Perachora cup forming the main link:

9. Cup, Athens, from Perachora: *Perachora* II, pl. 30, 673.
10. Pyxis, Brussels A 2097: *CVA* I, pl. 3, 1; *NC* 14, fig. 7; *PV* pl. 16.
11. Pyxis, Athens, from Perachora: *Perachora* II, pl. 41, 943; *JHS* 1930, pl. 10, middle r.
12. Pyxis lid, Athens, from Perachora: *Perachora* II, pl. 48, 1114.

Close to these:

Pyxis fr., Syracuse, from Syracuse: *MA* XXV 549–50, fig. 137, centre.

The following, by one hand, are related to this later group:

1. Kotyle-pyxis, Athens, from Perachora: *Perachora* II, pl. 38, 923.
2. Pyxis lid, Aigina: *AM* 1897, 324, figs. 39 *a–b*; *NC* 273, fig. 117, no. 53; Kraiker, *Aigina*, pl. 25, 322.
3. Pyxis lid, Aigina: *JHS* 1951, pl. 28 *g*.

Telestrophos Painter. MPC.

1. Pyxis, Aigina: *AM* 1897, 321, fig. 38; 1899, 361; Pfuhl, *MuZ* fig. 73; *NC* 98, fig. 30; Matz, *Gesch. gr. Kunst* I, fig. 10; Kraiker, *Aigina*, pll. 19 and C, 267.

Perhaps

2. Kotyle, Athens, from Perachora: *Perachora* II, pl. 21, 397.

This is also related to the early work of the Boston Painter.

Round Dance Painter. MPC.

1. Oenochoe frr., Aigina; Kraiker, *Aigina*, pl. 27, 342; Reichel, *Gr. Goldrelief*, pl. 11, 2.
2. Oenochoe fr., Aigina. Inst. phot. Aigina 35. Wing and tail of sphinx seated to r.; two women to r. (outline faces); two horses (of chariot?) to r., behind them woman to l. (outline face).
3. Kotyle, Athens, from Perachora: *Perachora* II, pl. 21, 398.

Compare:

Aryballos fr., Athens, from Perachora: *Perachora* II, pl. 3, 78 (with 1).

and possibly also:

Pyxis, London A 1345, from Kamiros: *VS* pl. 42, 6; *NC*, no. 207. Late.

Displayed Siren Painter. MPC II.

Follower of the Toulouse Painter, or imitator of his followers.

1. Kotyle fr., Athens, from Argive Heraion: *AH* II, pl. 59, 29; *NC* pl. 4, 8.
2. Conical oenochoe, Athens, from Perachora: *Perachora* II, pl. 11, 228; *JHS* 1930, pl. 10, middle l., and p. 239, fig. 1; part, Buschor, *Die Musen des Jenseits* 20, fig. 8.
3. Conical oenochoe, fr., Athens, from Perachora: *Perachora* II, pl. 17, 292; *JHS* 1930, pl. 10, top r. Late slight or school work.

Hound Painter. M–LPC.

Pupil of the Toulouse Painter.

1. Pyxis lid, Aigina: *NC* pl. 4, 3; *PV* pl. 13, 1; Kraiker, *Aigina*, pl. 20, 263. Early.
2. Oenochoe, Ithaca, from Aetos: *BSA* XLVIII, pl. 16, 965. Early.
3. Kotyle, Aigina: *AM* 1897, pl. 7, 1; Kraiker, *Aigina*, pl. 17, 252 and p. 48.
4. Kotyle, London A 1530, from Kamiros: *VS* pl. 25, 1; Pfuhl, *MuZ* fig. 60; *NC* pl. 5; *PV* pl. 13, 2 and 14, 2–4, 32, 5; Lane, *Greek Pottery*, pl. 23 D.
5. Kotyle, Florence 79249, from Rhodes: *VS* pl. 25, 2.
6. Oenochoe fr., Berlin, from Aigina: lion's head l. Very large scale (nose tip to ear tip 4·7 cm.; eyebrow three lines deep).
7. Pyxis lid, Athens, from Perachora: *Perachora* II, pl. 48, 1117; *ILN* 15 Nov. 1930, colour plate 1, mid l.; *JHS* 1930, pl. 10, bottom.
8. Kotyle fr., Athens, from Perachora: *Perachora* II, pl. 22, 401.
9. Olpe, Villa Giulia, from Veii: *NS* 1930, pll. 2–3; *AA* 1930, 322, fig. 7 r.; *PV* pl. 26, 1 and 5; Buschor, *Gr. Vasen* 32, fig. 38; Matz, *Gesch. gr. Kunst* I, pl. 152 b, part.

1–2, Benton; 3–5, Johansen; 7, 9, Payne. Kraiker, on 1, ascribes to the same hand an oenochoe fr. in Berlin, from Aigina, which we have not seen, unless it be 6. Also related are two pieces by another pupil of the Toulouse Painter:

1. Pyxis lid, Vatican: Albizzati, pl. 7, 81 and p. 31, figs. 7–8; *PV* pl. 15, 1–3.
2. Conical oenochoe, Rome, from the Esquiline: *Bull. Comm.* 1898, pl. 11, 7; *MA* XV, pl. 17, 9 (see *NC* 14).

Another late follower is the painter of:

Squat olpe, Munich 228: Sieveking and Hackl, pl. 11 and p. 12, fig. 18; *VS*, pl. 45, 3; *NC* 272, no. 49.

Also from his workshop the following unfigured vases:

Squat olpe, Munich 227: Sieveking and Hackl, pl. 11; *NC*, no. 50.
Squat olpe, London A 1008, from Kamiros: *NC*, no. 51; Lane, *Greek Pottery*, pl. 24 A.

Aigina Bellerophon Painter. MPC II.

Pupil or younger companion of the Hound Painter. 1 stands slightly apart from the others but is probably the painter's early work.

1. Oenochoe, Syracuse, from Megara Hyblaia: *MA* I 810–1; *NC*, pl. 7 and pp. 12 f.
2. Kotyle, Aigina: *VS* pl. 35, 3; Pfuhl, *MuZ* fig. 63; *NC* pl. 4, 1–2; *PV* pl. 17; *AM* 1935–6, pl. 99, 1 (part); Welter, *Aigina* 33 ff., figs. 33–4; Buschor, *Gr. Vasen* 28, fig. 33; Matz, *Gesch. gr. Kunst* I, pl. 150; Kraiker, *Aigina*, pll. B, 18, 20, no. 253.
3. Oenochoe, Aigina: part, *AM* 1897, 303, fig. 27; *NC* pl. 4, 4 and pl. 6; *PV* pll. 18 and 19, 3; Lane, *Greek Pottery*, pl. 27 A; Kraiker, *Aigina*, pll. 20–2, 273.

3A. Oenochoe neck, Aigina: Kraiker, *Aigina*, pl. 26, 339. Same vase as last? (see M.R., *JHS* LXXIII 185).

4. Pyxis lid, Athens, from Perachora: *Perachora* II, pl. 55, 1235.

Possibly also -

5. Oenochoe fr., Berlin, from Aigina: lion's head r. (*cf.* with 3A).

A plaque in Corinth (lion and boar) is ascribed by Payne, who put together 2, 3 and 4; we have not seen this.

Agamemnoneion Painter.

Stands between the Aigina Bellerophon Painter and the Head-in-Air Painter.

1. Oenochoe frr., Athens, from Perachora: *Perachora* II, pl. 7, 181.
2. Oenochoe fr., Aigina: Kraiker, *Aigina*, pl. 20, 271.
3. Kotyle fr., Athens, from Mycenae, Agamemnoneion: *BSA* XLVIII 51, fig. 22, D. 7.
4. Kotyle frr., Athens, from Perachora: *Perachora* II, pl. 7, 400.
5. Kotyle fr., Aigina: Kraiker, *Aigina*, pl. 31, 404; *JHS* 1951, pl. 28 *f*.

Perhaps also:

Conical oenochoe fr., Athens, from Perachora: *Perachora* II, pl. 17, 278.

Head-in-Air Painter. MPC II–LPC.

Pupil both of Bellerophon and of Sacrifice Painters. See also *BSA* XLIII 45.

1. Loom weight, Athens, from Perachora: *Perachora* II, pll. 48 and 55, 1312.
2. Kotyle fr., Aigina: Kraiker, *Aigina*, pl. 17, 254; *VS* 100, no. 58.
3. Tall pyxis fr., Athens, from Perachora: *Perachora* II, pl. 41, 1064.
4. Dinos, Syracuse: *NC* no. 52A; *JHS* 1951, pl. 29 *f*.
5. Aryballos, Syracuse, from Syracuse: *MA* XXV, pl. 14; *VS* pl. 34, 1.

1–5 are early works. The following are not in chronological order:

6. Aryballos, Boston 99. 512: *VS* pl. 37, 4; Fairbanks pl. 42, 401; *NC* no. 14, pl. 9, 8–9; *PV* pl. 30, 6–7; Matz, *Gesch. gr. Kunst* I, pl. 146 a.
7. Aryballos, Villa Giulia, from Caere: *VS* pl. 37, 1; *NC* no. 15; *SE* I, pl. 27, second row r.
8. Aryballos, Villa Giulia, from Caere: *VS* 101, no. 72; *NC* no. 16; *SE* I, pl. 27, top row l.
9. Aryballos, Syracuse, from Syracuse, grave 29: *NS* 1893, 458; *VS* pl. 37, 3; *NC* no. 17, pl. 9, 4–6.
10. Aryballos fr., Athens, from Argive Heraion: *AH* II, pl. 59, 31; *PV* pl. 30, 3.
11. Aryballos, London 60.4–4.16, from Kamiros: *VS* pl. 44, 1; *NC* no. 18, pl. 9, 1; *PV* pl. 30, 2; Lane, *Greek Pottery*, pl. 25, B–C.
12. Aryballos, Athens, from Perachora: *Perachora* II, pl. 1, 88.
13. Aryballos, Athens, from Perachora: *Ibid.*, pl. 1, 89.
14. Aryballos, Taranto, from Taranto, grave 72 (1938–9): *NS* 1940, 493, figs. 60–1.
15. Alabastron, Syracuse, from Syracuse, grave 430: *NS* 1895, 171, fig. 67; *VS* pl. 38, 3; *NC* no. 25.
16. Alabastron, London 1907.12–1.789, from Ephesus: Hogarth, *Ephesus* 231, fig. 60; *VS* 102, no. 80; *NC* no. 26; *PV* pl. 30, 4.
17. Alabastron, Frankfurt: Schaal, *Gr. Vasen aus Frankfurter Sammlungen*, fig. 8; *NC*, no. 27.
18. Conical oenochoe, Ithaca, from Aetos: *BSA* XLIII, pl. 11 and p. 45, fig. 31, no. 213.
19. Conical oenochoe, whereabouts unknown (known to us from Payne's notes and photographs): two boars facing.
20. Olpe, Corinth C.31.316: *Corinth* VII i, pll. 20–1, 142.
21. Kotyle frr., Athens, from Perachora: *Perachora* II, pl. 22, 416.
22. Kotyle frr., Athens, from Perachora: *Ibid.*, pl. 22, 414.
23. Kotyle fr., Athens, from Perachora: *Ibid.*, pl. 22, 415.

6–9, Johansen; 10–13, 15–17, 19 added by Payne, who also put 2 and 3 together. Payne also in a manuscript note ascribed an aryballos fr., Corinth B 80, which we have not seen.

Painter of the Corinth Hare-Hunt. MPC II–LPC.

Related to Head-in-Air.

1. Pyxis lid, Athens, from Perachora: *Perachora* I, pl. 24, 8; *PV* pl. 32, 9. Early.
2. Olpe, Syracuse, from Syracuse: *MA* XXV 553–4, fig. 139, bottom centre.
3. Olpe frr., Corinth C.32.139: *Corinth* VII i, pl. 30, 218; *AJA* 1937, 219, fig. 1, no. 1.

Boston Painter. MPC II–LPC.

Pupil of Aetos Painter. Companion of Sacrifice and Macmillan Painters.

1. Kotyle, Athens, from Perachora: *Perachora* II, pl. 20, 395.
2. Kyathos, Ithaca, from Aetos: *BSA* XLIII, pl. 4, 52 and p. 21, fig. 12.
3. Kotyle, Ithaca, from Aetos: *BSA* XLIII, pl. 14, 32 and p. 17, fig. 8.
4. Aryballos, Athens, from Argive Heraion: *AH* II, pl. 65, 3: *NC* pl. 4, 6 and p. 10, fig. 5.
5. Aryballos, Boston 95.11: *AJA* 1900, pl. 5; *VS* pl. 27, 1; Fairbanks, p. 149, no. 397; *PV* pl. 20, 1 and 5; *BSA* XLII 97, fig. 8 *a*; Matz, *Gesch. gr. Kunst* I, pl. 149 a; *Studies presented to D. M. Robinson* II 1165, fig. 1.
6. Conical oenochoe fr., Athens, from Perachora: *Perachora* II, pl. 16, 259.
7. Aryballos, Louvre *CA* 931, from Thebes: *Mélanges Perrot*, pl. 4; *VS* pl. 35, 1; *NC* pl. 1, 8–11 and p. 95, fig. 29A; *PV* pl. 22, 3–4, 23, 4; *CVA* VIII, pl. 14, 10–3; Dörpfeld, *Alt-Olympia* II, Beil. 29*a*; Buschor, *Gr. Vasen* 30, fig. 34; *BSA* XLII 100, fig. 9 *a–c*; Matz, *Gesch. gr. Kunst* I, pll. 83 b, 152 a.
8. Pyxis fr., Athens, from Perachora: *Perachora* II, pl. 41, 1063.
9. Olpe, Heraklion, from Knossos: *BSA* XXIX, pl. 25; *NC* no. 42, pl. 8, 1–6; *PV* pl. 32, 3, 7. Late.

Sacrifice Painter. MPC II–LPC.

Close companion of the Macmillan Painter. See *JHS* 1951, 63 f. 1 stands slightly apart from the others but is probably the painter's early work.

1. Conical oenochoe fr., Syracuse, from Syracuse: *MA* XXV 491, fig. 83.
2. Conical oenochoe fr., Aigina: Kraiker, *Aigina*, pl. 23, 282. (Still early.)
2A. Conical oenochoe fr., Berlin, from Aigina: bull. Probably from the same vase as 2.
3. Conical oenochoe fr., Istanbul, from Lindos: *Lindos* I, pl. 50, 1098.
4. Conical oenochoe, Athens, from Perachora: *Perachora* II, pl. 12, 229; one fr., *JHS* 1930, pl. 10, top centre.
5. Conical oenochoe, Ithaca, from Aetos: *JHS* 1938, pl. 19 (part); Buschor, *Gr. Vasen* 30, fig. 36 (part); *BSA* XLVIII, pl. 22, 1023.
6. Conical oenochoe fr., Corinth, from Potters' Quarter: lion; above, chequers; lotus and palmette chain; small silhouette bird in red perched on the volute of the palmette.
7. Kotyle-pyxis (?) fr., Athens, from Perachora: *Perachora* II, pl. 30, 924.
8. Conical oenochoe fr., Aigina: Kraiker, *Aigina*, pl. 28, 349; *JHS* 1951, pl. 28 *c*.
9. Conical oenochoe fr., Amsterdam inv. 2082, from Aigina: *JHS* 1951, 64, fig. 1.
10. Kotyle frr., Athens, from Perachora: *Perachora* II, pl. 22, 412.
11. Kotyle frr., Athens, from Perachora: *Ibid.*, pl. 21, 399.
12. Kotyle frr., Aigina: Kraiker, *Aigina*, pl. 24, 296.
13. Oenochoe frr., Aigina: *Ibid.*, pl. 27, 340.
14. Oenochoe frr., Aigina: *Ibid.*, pll. 27 and B, 341; *JHS* 1951, pl. 28 *a–b*.
15. Conical oenochoe, Athens, from Perachora: *Perachora* II, pl. 13, 230; *PV* pl. 19, 5; *ILN* Nov. 15, 1930, colour pl. 1, right.
16. Aryballos, Boston 99.511: *VS* pl. 26, 4; Fairbanks, pl. 41, 399; *PV* pl. 19, 4, 6; Lane, *Greek Pottery*, pl. 23 B.
17. Aryballos, London 94.7–18.2, from Eretria: *VS* pl. 27, 2; *NC* pl. 3, 1; *PV* pl. 19, 2.
18. Kotyle frr., Athens, from Perachora: *Perachora* II, pl. 22, 427.
19. Kotyle frr., Athens, from Perachora: *Ibid.*, pl. 22, 428.
20. Kotyle fr., Athens, from Perachora: *Ibid.*, pl. 21, 407.
21. Kotyle frr., Athens, from Perachora: *Ibid.*, pl. 21, 408.
22. Olpe frr., from Al Mina: *JHS* 1940, pl. 4 *n–p*. Late.
23. Olpe frr., Athens, from Argive Heraion: *AH* II, pl. 64, 2; *NC* no. 41, pl. 8, 7, 10; *PV* pl. 26, 2–3. Late.
24. Olpe, London A 1009: *NC* no. 48, pl. 10, 5–6. Late.

Payne ascribes as a late work an aryballos in Berlin (chimaera), which we have not seen. The nearest parallel we know for the horse's head on the bottom of the oenochoe in Ithaca (5) is the human head on an unpublished fragmentary oenochoe from Aigina, in Berlin. (Under handle, bearded head to r. drawn in broad outline, about six inches high; in front of head, tripod in silhouette with incised zig-zags on legs and handles; from front of vase small remains of floral; stalked rosette between head and tripod; at base rays, with short inverted rays between.)

2 and 2A associated by Kraiker; 12–14 also put together by Kraiker; 16 and 17 associated by Johansen; 14, 15, 20, 21 added by Payne.

Macmillan Painter. MPC II–LPC.

Close companion of Sacrifice Painter.

1. Aryballos, Berlin inv. 2686, from Corinth: *AZ* 1883, pl. 10, 1; *VS* pl. 30, 1; *PV* pl. 21; Matz, *Gesch. gr. Kunst* I, pll. 148, 149 c, 297 a; Homann-Wedeking, *Die Anfänge der gr. Grossplastik* 135, fig. 63. Very early.
2. Aryballos, Boston 95.10, from Thebes: *AJA* 1900, pl. 4; *VS* pl. 30, 2; Fairbanks 151, no. 400; *PV* pl. 20, 2–4; Yalouris, *Mus. Helv.* VII (1950), 25, fig. 2; Matz, *Gesch. gr. Kunst* I, pll. 149 b, 297 b–c. Still early.
3. Alabastron fr., Corinth: *JHS* 1951, pl. 29 *a*. Still early.
4. Aryballos, Louvre CA 1831: *VS* pl. 33; *NC* pl. 1, 5; *CVA* VIII, pl. 14, 5–9; *BSA* XLII 100, fig. 9 *d*.
5. Aryballos, Syracuse, from Gela: *MA* XVII 157 f., fig. 116; *VS* pl. 34, 2; *BSA* XLII 97, fig. 8 *c*.
6. Oenochoe, Ithaca, from Aetos: *BSA* XLIII 39, fig. 26, 146.
7. Aryballos, fr., Athens, from Perachora: *Perachora* II, pl. 3, 87.
8. Aryballos, Taranto 4173, from Taranto: *VS* pl. 35, 2; *CVA* II, pl. 1, 1–3; 3.
9. Aryballos, Bonn inv. 1669, from Gela: *AA* 1936, 345–6, fig. 4.
10. Aryballos, London 89.4–18.1, from Thebes: *JHS* 1890, pll. 1–2; *VS* pl. 31; *NC* pl. 1, 7; *PV* pl. 22, 1–2, 5; Dörpfeld, *Alt-Olympia* II, Beil. 29 *b*; Buschor, *Gr. Vasen* 30, fig. 35; Lane, *Greek Pottery*, pl. 23 C; Matz, *Gesch. gr. Kunst* I, pll. 146 d, 151 a.
11. Aryballos, Berlin 3773, from Rhodes: *JdI* 1906, pl. 2; *VS* pl. 32; Pfuhl *MuZ* fig. 58; *PV* pl. 23, 1–3; Matz, *Gesch. gr. Kunst* I, pl. 151 b.
12. Olpe, Villa Giulia, from Veii: *AD* II, pll. 44–5; *Ausonia* 1913, pll. 5–8; *VS* pll. 39–40; Pfuhl, *MuZ* fig. 59; *CVA* I, pll. 1–4; *NC* no. 39; *PV* pll. 27–9; Buschor, *Gr. Vasen* 31, fig. 37; Lane, *Greek Pottery*, pl. 24 B; Matz, *Gesch. gr. Kunst* I, pll. 153–5, 262 b.
13. Olpe fr., Aigina: *NC* no. 40; Kraiker, *Aigina*, pl. 28, 348; *JHS* 1951, pl. 29 *b*.

Perhaps also

14. Alabastron, Athens, from Perachora: *Perachora* II, pl. 59, 1502.
15. Oenochoe neck, Aigina: Kraiker, *Aigina*, pl. 19, 335 (cf. *NC* 97, F 217).

With this Kraiker associates:

Kotyle fr., Aigina: Kraiker, *Aigina*, pl. 19, 295.

Related:

Conical oenochoe, Athens, from Perachora: *PV* pl. 24, 2; *Perachora* II, pl. 15, 227. Compare with early work, especially 2.
Oenochoe frr., Ithaca, from Aetos: *BSA* XLIII 39, fig. 26, 147. Late.

1 and 2 associated by Johansen; 4, 5, 8, 10, 11 put together by Johansen ('style magnifique'); 3 added by Payne; 9 and 11 associated by Greifenhagen. 12 and 13 put together by Payne (Chigi Painter).

The following unfigured olpai must come from the Macmillan Painter's workshop (cf. *JHS* 1951, 68 f.):

1. Vatican 80: Albizzati pl. 6; *VS* 103, fig. 56; *NC* no. 43.
2. Berlin 1138, from Tarquinii: *NC* no. 44.
3. Rome, Villa Giulia 50484: *NC* no. 45; Mingazzini, *I Vasi Castellani*, no. 338, pl. 21, 1; 10, 8.
4. Rome, Villa Giulia: *NC* no. 46; Mingazzini, *op. cit.*, pl. 21, 3, no. 339.
5. Syracuse, from Syracuse: *NS* 1895, 124, fig. 5.
6. From Al Mina: *JHS* 1940, pl. 4 *k*, *m*.
7. From Al Mina: *Ibid.*, pl. 4 *l*.
8. Rome, Villa Giulia, from Veii: *NS* 1930, pl. 2 *a* and p. 58, fig. 9; *AA* 1930, 321, fig. 7, l.

The succession to the Macmillan Painter in the next generation has been remarked by Payne (see *NC* 97) in the following:

1. Olpe (?) fr., Corinth: 'thighs of man in Chigi technique; rosette on trunks; buff flesh'.
2. Alabastron, Aigina: *NC* no. 110; Furtwängler, *Aegina*, pl. 128, 16.
3. Oenochoe frr., Athens, from Argive Heraion: *NC* no. 131; *AH* II, pl. 59, 25.

Fighting Rams Painter. MPC II.

1. Aryballos, Berlin, from Thebes: *VS* pl. 28, 2.
2. Aryballos, Rome, Villa Giulia 21126, from Caere: *VS* pl. 28, 1; *SE* I, pl. 27 *a*, right.
3. Aryballos, London 1913.10–20.1: *VS* pl. 28, 3.
4. Conical oenochoe fr., Athens, from Perachora: *Perachora* II, pl. 17, 281.
5. Conical oenochoe fr., Athens, from Perachora: *Ibid.*, pl. 17, 282.

1–3, Johansen.

Delphi Group. LPC.

These are the product of one workshop and probably of one hand; they derive from the Fighting Rams Painter. Not in chronological order.

1. Aryballos, Delphi: *FdD* V 151, fig. 627; *VS* pl. 36, 4; *NC* no. 1; *PV* pl. 19, 4 and 6.
2. Aryballos, Delphi: *Ibid.*, fig. 621; *VS* 100, no. 61; *NC* no. 2.
3. Aryballos, Delos: *Délos* X, pl. 21, 151; *NC* no. 3.
4. Aryballos, Brussels: *CVA* I, pl. 1, 17; *VS* pl. 36, 3; *NC* no. 4.
5. Aryballos, Syracuse, from Gela: *MA* XVII 327, fig. 241; *VS* pl. 36, 1; *NC* no. 5.
6. Aryballos, Syracuse, from Megara Hyblaia: *VS* pl. 36, 2; *NC* no. 6.
7. Aryballos, Eleusis: *VS* 100, no. 59; *NC* no. 7.
8. Aryballos, Aigina: *NC* no. 8; Inst. Phot. Aigina 35.
9. Aryballos, Sparta: *BSA* XXVIII 80, fig. 20 *c*. (See *NC* 342, XVI.)
10. Aryballos, Ithaca, from Aetos: *BSA* XLIII, pl. 14, 255 and p. 51, fig. 36.
11. Aryballos, Athens, from Perachora: *Perachora* II, pl. 3, 94.
12. Aryballos, Athens, from Perachora: *Ibid.*, pl. 3, 95.
13. Aryballos, Athens, from Perachora: *Ibid.*, pl. 3, 96.
14. Aryballos, Athens, from Perachora: *Ibid.*, pl. 3, 97.

Perhaps also:

15. Alabastron, Athens, from Perachora: *Ibid.*, pl. 59, 1501.

1–2, 4–7, Johansen; 3, 8, 9, Payne.

Leiden Painter. LPC–TR.

Pupil of the Bellerophon Painter; leads on to such Transitional painters as the Painter of Vatican 73 (*NC* 277, under ' Olpai ').

1. Olpe, Leiden: Brants, pl. 12, VIII, 8.
2. Olpe, Leiden: Brants, pl. 12, VIII, 9.
3. Oenochoe, Ithaca, from Aetos: *BSA* XLIII, pl. 15, 148 and p. 39, fig. 26.
4. Conical oenochoe, Athens, from Perachora: *Perachora* II, pl. 16, 272.
5. Pyxis lid, Athens, from Perachora: *Ibid.*, pl. 48, 1125.
6. Pyxis lid, Athens, from Perachora: *Ibid.*, pl. 48, 1126.
7. Pyxis lid, Athens, from Perachora: *Ibid.*, pl. 48, 1127.

Confronted Griffins Painter. LPC.

Pupil of Aetos Painter; poor relation of Boston Painter.

1. Aryballos, Syracuse, from Syracuse: *MA* XXV, pl. 13; *VS* pl. 37, 5; *NC* no. 11.
2. Conical oenochoe, Athens, from Perachora: *Perachora* II, pl. 14, 240.
3. Conical oenochoe, Athens, from Perachora: *Ibid.*, pl. 16, 285.
4. Kotyle, Ithaca, from Aetos: *BSA* XLIII, pl. 14, 33.

Torr Painter. LPC.

Standing between Head-in-Air Painter and the Delphi Group.

1. Aryballos, Oxford 1929.362, from Rhodes: *NC* no. 9, pl. 9, 2–3; *CVA* II, pl. 6, 7–8 and 12.
2. Aryballos fr., Athens, from Perachora: *Perachora* II, pl. 1, 92.
3. Aryballos fr., Athens, from Perachora: *Ibid.*, pl. 1, 100.
4. Aryballos fr., Athens, from Perachora: *Ibid.*, pl. 1, 101.
5. Alabastron fr., London 1912.6–26.182, from the Argive Heraion.

Perhaps also:

6. Alabastron, Eleusis 782: *NC* no. 30, pl. 9, 7 (compared by Payne with 5).

Manner:

Aryballos, Berlin inv. 3258, from Sicily: *VS* pl. 36, 5; *NC* no. 12, pl. 8, 9; *PV* pl. 30, 1.

Payne attributes also frr. of an aryballos from Corinth (trench through Temple of Athena, 14.4, 1926) (see text to *CVA Oxford* II 71) but we have not seen this.

T. J. Dunbabin.
M. Robertson.

Postscript: J. L. Benson's *Die Geschichte der Korinthischen Vasen* (Basel 1953) only reached us when this article was in proof. He includes lists of Corinthian vase-painters; and his lists 1–25 cover much the same ground as we do here. Of these 18, 20, 23, and 25 deal with Transitional vases which we have not included. Also we do not include the vases of his small list 8 (*Hasemaler*), nor he those of our small Telestrophos, Round Dance, and Displayed Siren Painters. Apart from these, with certain exceptions, his lists correspond basically and often closely to ours. In general, his are shorter, sometimes much shorter: *e.g.* his list 7 (*Jägermaler*) consists of two vases, nos. 6 and 7 of our Aetos Painter—but in general the correspondence is much closer than that. He omits two of our big groups, Cumae Group and Toulouse Painter, and is in general less concerned to relate the groups to one another. His short lists 10, 16, and 19 show real disagreement with us over the attribution of certain vases in the circle of the Macmillan, Sacrifice, and Boston Painters, but we are pleased to note that we agree in ascribing the Chigi vase to the Macmillan Painter (his *Ekphantosmaler*). We have added the Paros aryballos (his pl. 1 a) to our list of the Ajax Painter (corresponding to his 5, *Maler des gestikulierenden Reiters*) but have made no other additions or alterations from his book.

THE BYZANTINE MODES IN THE TWELFTH CENTURY

Two recent publications mark an important stage in the progress of Byzantine musical studies—the facsimile of the Hirmologium at Grottaferrata (Codex G) and the transcription of two Modes from the Athos manuscript (Codex H) of which the facsimile appeared in 1938. These two manuscripts, though their dates are more than a hundred years apart, embody the standard musical tradition of the Hirmologium, whose origin lies in a far remoter antiquity. Otherwise they differ greatly; for, while H is often obscure and inaccurate, we are delighted by the clarity and beauty of G, a manuscript long familiar to scholars and already used (or rather, alas, misused) by Dr. Hugo Riemann before 1909. It is therefore the good fortune of our time that we may now use G to correct or elucidate the text of H.[1]

When we consider the signatures of the Byzantine Modes, it becomes clear that there are two main points for discussion—firstly, the actual meaning of the signature as an indication of the initial note or initial formula of the hymn; and, secondly, the origin and growth of the signature itself and the significance of its component parts.

As it happens, the former of these points has attracted earlier attention; and a practical explanation was reached before 1931. This resulted in a table of signatures, which has been amplified and thoroughly tested, so that it is now supported by the decipherment of at least two thousand hymns, carried out partly by Prof. Egon Wellesz and his collaborators, and partly by myself. Such an inductive procedure was made necessary by the conventional nature of the signatures, few of which bore a self-evident clue to their meaning. But, now that the table of signatures is firmly established, we can read all the eight Modes with equal assurance and can usually evaluate an abnormal signature by the same method.

A fuller study of the Athos manuscript by the learned transcribers and editors of the *First Authentic and First Plagal Modes* has at length afforded guidance towards the historical understanding of the signatures and their development, which is the second point at issue. Here I am glad to accept the judgment of my colleagues, on the strength of which a simple account of the matter may now be given.

First Stage. In the Early Byzantine notation the signature (called in Greek *Martyria*) was a numerical sign, consisting of a letter of the Greek alphabet surmounted by a small half-circle or stroke. In the Plagal Modes the letters ΠΛ, in some form, were added, except in the Third Plagal, which bore the signature BAPYC, often abbreviated. Thus the Intonation and the initial note were left to the precentor's memory. The initial note, from which the melody takes its first progression, is the last note of the Intonation. The Intonation was a formula characteristic of the Mode, and was sung by the precentor before the hymn itself.

Second Stage. In the 12th century we find that *neumes*, representing Intonations, have been added in the margin, either by a later hand or by the original scribe. These *neumes* may cover a complete Intonation; or, more often, they only show by a mere fragment what note or notes the precentor had to intone.[2]

Now Codex H, a 12th-century manuscript, the earliest extant in the Middle Byzantine

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[1] Recent works: *Monumenta Musicae Byzantinae* III, *Hirmologium Cryptense*, ed. Laurentius Tardo. A magnificent facsimile of this famous MS., with a scholarly introduction. *MMB Subsidia* II, *Eastern Elements in Western Chant*, by Egon Wellesz. *MMB Transcr.* III; and V, *The Hymns of the Octoechus*, transcribed by H. J. W. Tillyard. *MMB Transcr.* VI, *The Hymns of the Hirmologium* Pt. 1, edited by C. Höeg. Other series: E. Wellesz, *History of Byzantine Music and Hymnography* (Oxford, 1949), an invaluable introduction, both scientific and popular, with copious examples and illustrations. A good summary of the latest results is given by R. Palikarova-Verdeil in *Byzantinoslavica* 10 (1949), 268.

[2] *Cf.* E. Wellesz, *Byz. Musik* (Breslau, 1927), pl. 10.

(Round) Notation, follows exactly the usage of our Second Stage. We find the numerical signature at the head of every Canon, with some form of Intonation added in the margin by the music-scribe; but the later Hirmi (Odes II–IX) have only an Intonation, and that often in an abbreviated form. If the reader will glance at our FIG. he will see the full Intonation of Mode I, both for the upper and lower Finalis (No. 1 and No. 2), and also the short forms commonly found in Odes II–IX (No. 3 and No. 4). It will be noticed that the short forms do not make sense by themselves, *i.e.*, they do not bear their normal interval-value, which would here be g or c, whereas in practice they mean the same as the full forms, *viz.* a or d.

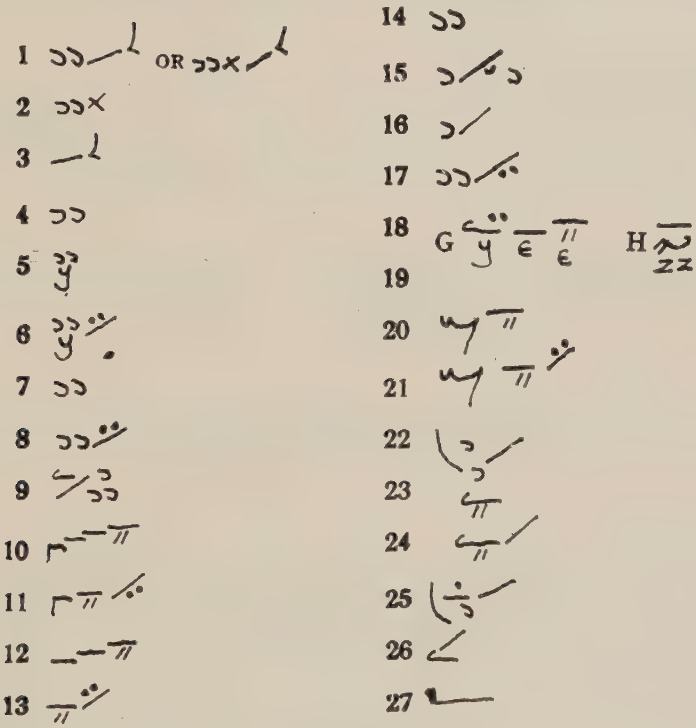


FIG. 1–25, SIGNATURES OF THE BYZANTINE MODES. 26–27, THE ISON.

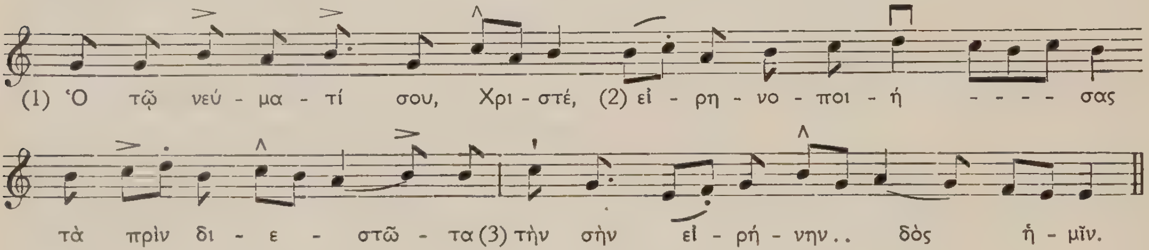
Third Stage. In the 13th century and later we see that the Intonation is attached to the numerical sign and has replaced the half-circle or stroke over the letter. In fact, the signatures have become stereotyped and indivisible. For instance, in G the entire signature stands before every Ode throughout the whole series. This, however, did not prevent the scribe from adding a fuller Intonation, if he thought fit, as we see from other MSS. of the Middle Byzantine age. These conventional signatures lasted through the Late Byzantine period and survive even in the modern or Chrysanthine Notation (published in 1821).

We have said that the shortened Intonations do not make sense by themselves; so the question arises—do the abbreviated signatures in H mean the same as the entire signatures in other MSS.? For Modes I and IV and I Plagal the matter is not crucial, as there is seldom any doubt of the proper initial note; but in the other five Modes a wrong answer would make havoc of the whole system. We must therefore test the most common signatures in H in these five Modes. A study of the rarer Intonations will naturally follow when a complete transcription is undertaken.

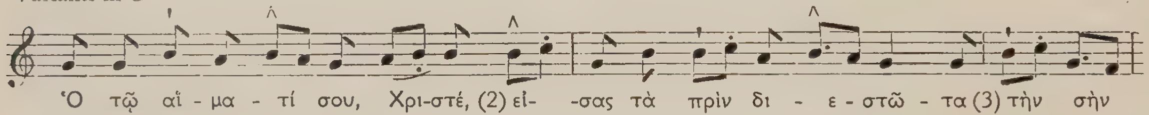
Mode II. There are two regular signatures: (*a*) *Beta* (which may be stylised) and two hooks (No. 5 in diagram, FIG.). This means g; (*b*) *Beta* and two hooks *plus* two ascending seconds (No. 6 *ibid.*). This means b-natural (h). It is clear that the two hooks have become a conventional sign; and the signature β'' is even used medially in Mode IV in some MSS. to mean g. It would be wrong to treat the hooks simply as the Double Apostrophus (descending second prolonged) which would bring us to a wrong note. Now in H we find the full signature No. 5 or No. 6 at the head of most Canons in Mode II, but shortened forms (No. 7 = g, and No. 8 = b) for the later Odes. Thus in our first example the two hooks stand by themselves in the margin, while G has signature No. 5.

1. ODE V. H f. 27; G f. 37b.

Mode II from g, Finalis e.


(1) Ὁ τῷ νεύ - μα - τί σου, Χρι - στέ, (2) εἰ - ρη - νο - ποι - ή - - - - σας
τὰ πρὶν δι - ε - στῶ - τα (3) τὴν σὴν εἰ - ρή - νην . . δὸς ἡ - μῖν.

Variants in G


Ὁ τῷ αἵ - μα - τί σου, Χρι-στέ, (2) εἰ- -σας τὰ πρὶν δι - ε - στῶ - τα (3) τὴν σὴν

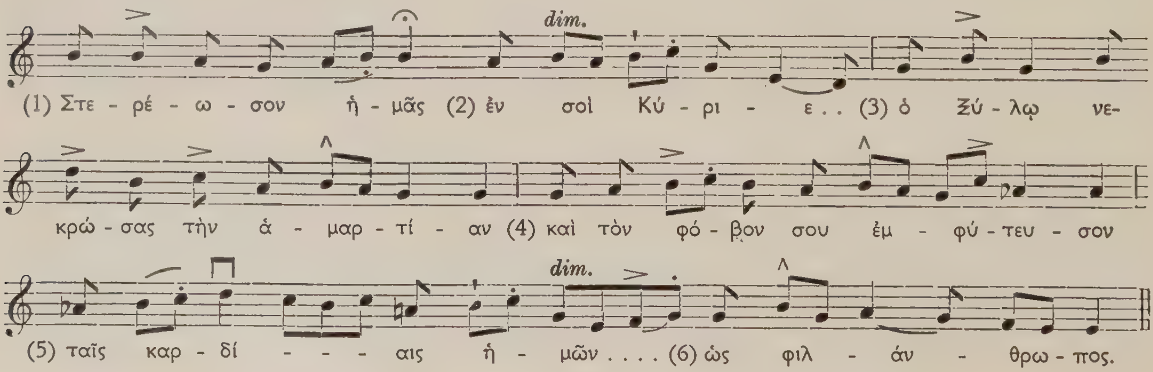
Line 1: G has 'blood' instead of 'nod' (= 'will'). Line 3: over τὴν the Petaste in H bears two faint dots, which the scribe wrote by mistake and tried to erase. They are not required. All cadences and progressions are normal in both versions; and the differences are slight. As G begins from g, we may safely infer that H does the same.

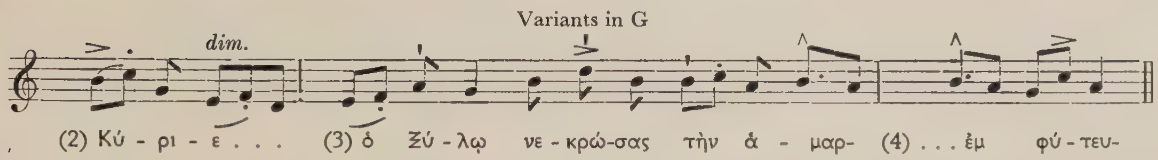
The next example shows the other signature frequently used in Mode II. Where G has *Beta*, two hooks and two ascending seconds (g-ab) H omits the *Beta* but has the rest exactly as in G. The close likeness of the tunes in these two MSS. shows clearly that the initial notes must be the same.

2. ODE III. H f. 25b; G f. 38b.

Mode II, from b, Finalis e.

H


dim.
(1) Στε - ρέ - ω - σον ἡ - μᾶς (2) ἐν σοὶ Κύ - ρι - ε . . (3) ὁ ξύ - λῳ νε-
κρώ - σας τὴν ἁ - μαρ - τί - αν (4) καὶ τὸν φό - βον σου ἐμ - φύ - τευ - σον
dim.
(5) ταῖς καρ - δί - - - - αις ἡ - μῶν . . . . (6) ὡς φιλ - άν - θρω - πος.

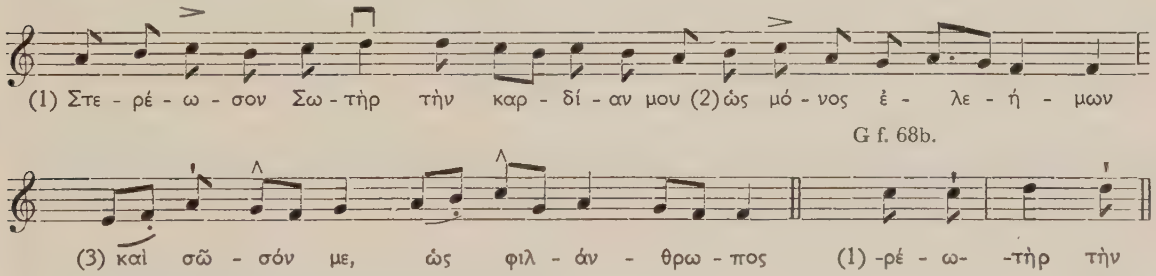

Variants in G
dim.
(2) Κύ - ρι - ε . . .
(3) ὁ ξύ - λῳ νε - κρώ-σας τὴν ἁ - μαρ-
(4) . . . ἐμ φύ - τευ-

The chromatic passage (lines 4–5) is in H only; and we know that chromatic changes were out of fashion in the 13th and 14th centuries; but later still they reappear, and modulation signs were often added to earlier MSS. by 15th- and 17th-century scribes. These two examples from H, because of their regular structure and nearness to G, are sufficient to prove that the shortened signatures in H mean the same as the entire signatures. But further evidence may easily be found; and, if the reader will decipher a few simple examples, such as f. 30 Ode V, f. 31 Ode V, f. 31b Odes II and IV, f. 32b Ode II, he will reach the same result. All these are clear in H, and their cadences are normal, which fully confirms the principle enunciated above. But how did the two hooks come to mean g? My answer is that they are an abbreviation of the Intonation b- a g- (FIG., No. 9), which is used in Codices D and B in places where other MSS. have the two hooks.[3]

Mode III. The usual signatures are: (1) *Gamma* with three overlapping level strokes, of which the last may have a length-mark (Diple, see FIG., No. 10). This means a. (2) *Gamma* with one level stroke (which may have a Diple) *plus* two ascending seconds (No. 11). This means c′. As before, we find that H uses the entire signature at the head of a Canon, but omits the *Gamma* in the later Odes (see No. 12 = a; No. 13 = c′). The next two examples show, by their close melodic likeness, that the short signatures in H imply the same initial notes as do the full signatures in G and elsewhere.

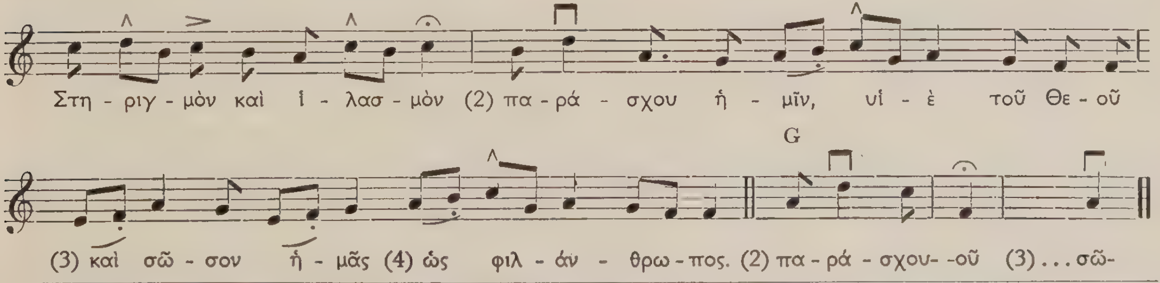
3. ODE III. H f. 49.

Mode III, from a; Finalis f.


(1) Στε - ρέ - ω - σον Σω - τὴρ τὴν καρ - δί - αν μου (2) ὡς μό - νος ἐ - λε - ή - μων
G f. 68b.
(3) καὶ σῶ - σόν με, ὡς φιλ - άν - θρω - πος
(1) -ρέ - ω- -τὴρ τὴν

4. H f. 4; G f. 62b.

Mode III, from c′, Finalis f.


Στη - ριγ - μὸν καὶ ἱ - λασ - μὸν (2) πα - ρά - σχου ἡ - μῖν, υἱ - ὲ τοῦ Θε - οῦ
G
(3) καὶ σῶ - σον ἡ - μᾶς (4) ὡς φιλ - άν - θρω - πος.
(2) πα - ρά - σχου- -οῦ (3) . . . σῶ-

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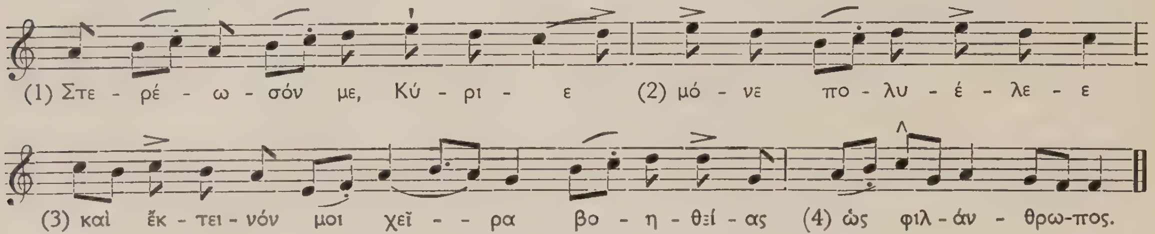
[3] *Cf.* my *Handbk. of Mid. Byz. Mus. Notn.* (*MMB Subsidia* I, Fasc. 1), 32 and E. Wellesz, *Die Hymnen d. Sticherarium f. Sept.* (*MMB Transcripta* I), Introd. xxiv. My *Octoechus*, Pt. 1, 24, where Codex B has the b- a g- formula, 117, 151.

In example 3 there is an Intonation d′ c′ a added to the shortened signature in H. Further evidence is afforded by a short ode in H, which does not seem to be in G. Here the signature is reduced to two hooks (as elsewhere in H) but the text is clear and points to a as the initial note.

5. ODE III. H f. 52

Mode III, from a; Finalis f.


(1) Στε - ρέ - ω - σόν με, Κύ - ρι - ε (2) μό - νε πο - λυ - έ - λε - ε
(3) καὶ ἔκ - τει - νόν μοι χεῖ - - ρα βο - η - θεί - ας (4) ὡς φιλ - άν - θρω-πος.

Another simple example, f. 49b Ode IX, may be left for the reader to examine.

Mode IV. The signatures in H consist of the same signs as in Mode I, so that no discussion of them is needed. It must only be remembered that the usual Finalis is g, but that c is also allowed as the initial note and is implied by the short signatures No. 2 and No. 4 in FIG. The upper Finalis d′ is sometimes the initial note [4]: in such cases the hymn ends on g.

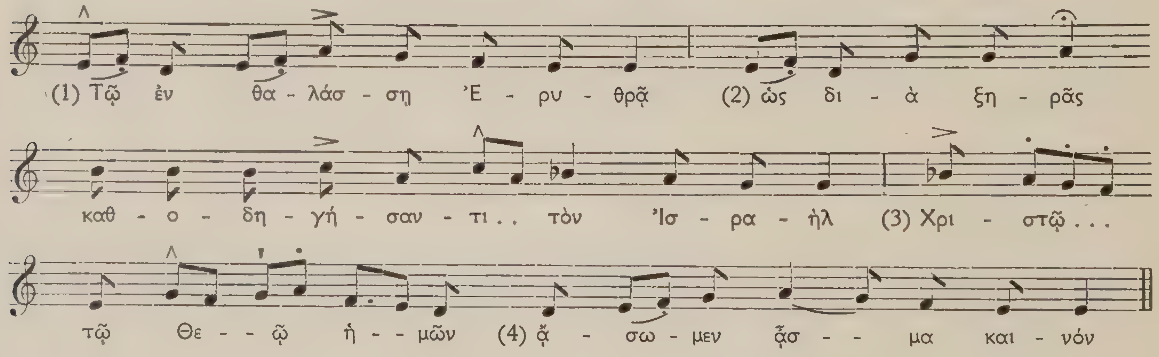
Mode I Plagal. This has been fully discussed in Prof. Höeg's introduction,[5] to which the reader is referred.

Mode II Plagal. This has four possible initial notes.[6] (1) from e: this is most frequent; and there are two shortened signatures in H (No. 14 and No. 15 in FIG.). (2) from f: short Intonation in H (*ibid.* No. 16) = ef. (3) from g: Intonation in H (*ibid.* No. 17) = e–fg.

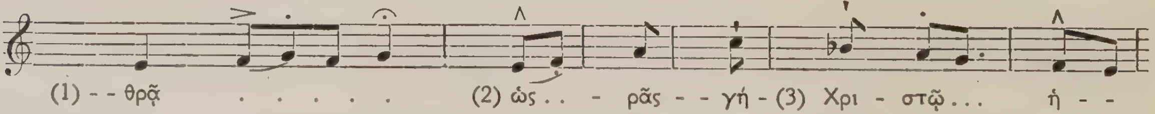
To all these G and other MSS. add the letters πλ.β′. I give an example of the e-signature.

6. ODE I. H f. 9–9b.

Mode II Plagal, from e.


(1) Τῷ ἐν θα - λάσ - σῃ Ἐ - ρυ - θρᾷ (2) ὡς δι - ὰ ξη - ρᾶς
καθ - ο - δη - γή - σαν - τι . . τὸν Ἰσ - ρα - ὴλ (3) Χρι - στῷ . . .
τῷ Θε - - ῷ ἡ - - μῶν (4) ᾄ - σω - μεν ᾆσ - - μα και - νόν

G f. 164b.


(1) - - θρᾷ . . . . . . (2) ὡς . . - ρᾶς - - γή - (3) Χρι - στῷ . . . ἡ - -

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[4] *Cf.* my *Octoechus*, Pt. 1, 160.

[5] *Op. cit.*

[6] The usual signatures are given in my *Handbook*, 33, 34. *Cf.* Wellesz, *Hist. of Byz. Mus. etc.* 249.

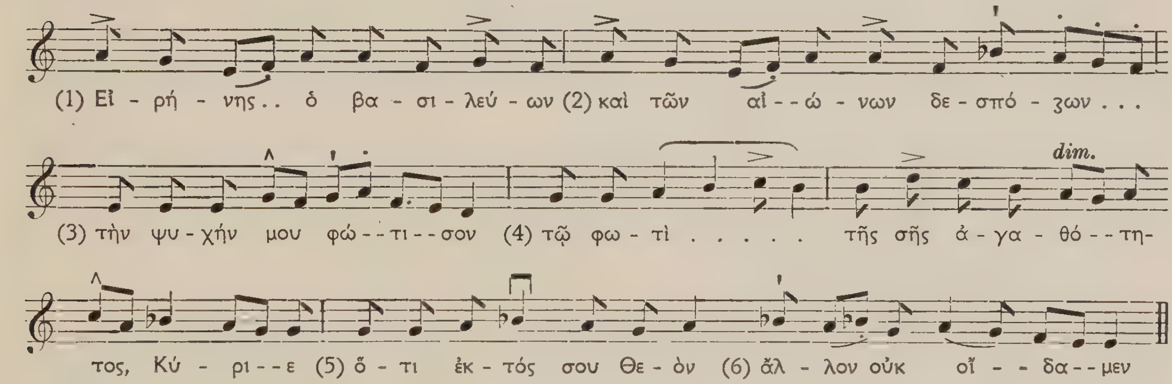
H has the signature $\genfrac{}{}{0pt}{}{\lambda}{\pi}\,\bar{B}$ at the head of the Canon and, for the Intonation, two hooks in the margin. G has the usual signature πλ.β''. Line 1 fin. G has the ornament *Thes-kai-Apothes* without the subsidiary sign.[7] Line 2. ξη- Ison certain in H, though indistinct; and again in line 4 fin.

For the f and g signatures the reader will find easy examples in H f. 100, Ode VI (where the Hyporrhoe over βά]θους has no internal value, being perhaps part of an uncompounded Subsidiary, the Gorgosyntheton) and in H f. 103 inf. Ode II.

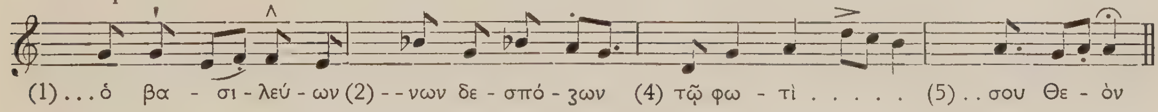
(4) Mode II Plagal often begins from a, which is shown in G and elsewhere by the Intonation ef g a-. H again shortens the formula by giving only the last note (Nos. 18 and 19 in FIG.). The likeness of melody in the next example shows that the same initial note is needed.

7. ODE V. H f. 100.

Mode II Plagal, from a; Finalis e.


(1) Εἰ - ρή - νης . . ὁ βα - σι - λεύ - ων (2) καὶ τῶν αἰ - - ώ - νων δε - σπό - ζων . . .
(3) τὴν ψυ - χήν μου φώ - - τι - - σον (4) τῷ φω - τὶ . . . . . τῆς σῆς ἀ - γα - θό - - τη-
dim.
τος, Κύ - ρι - - ε (5) ὅ - τι ἐκ - τός σου Θε - ὸν (6) ἄλ - λον οὐκ οἴ - - δα - - μεν

G f. 164b.


(1) . . . ὁ βα - σι - λεύ - ων (2) - - νων δε - σπό - ζων (4) τῷ φω - τὶ . . . . . (5) . . σου Θε - ὸν

The ornament called Thematismus Eso in line 4 is marked in H by its proper Subsidiary; but the notes in G are the usual formula.[8]

Mode III Plagal (*Barys*). There are two signatures in G, as in many other MSS. Most often we find a monogram for BAPYC (or υαρυς) with a level stroke and a mark of prolongation (FIG., No. 20). This means f, as it still does in the Modern Greek notation.[9] Or else we find the same signature with two ascending seconds added (No. 21). This means a. The level stroke may be a remnant of the longer Intonation f g e f- which some MSS. give for this Mode.[10] In H we find in Odes II–IX these same symbols *minus* the monogram, but clearly with the same meanings, as the following examples amply prove.[11]

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[7] *Handbk* 27.

[8] *Handbk.* 27.

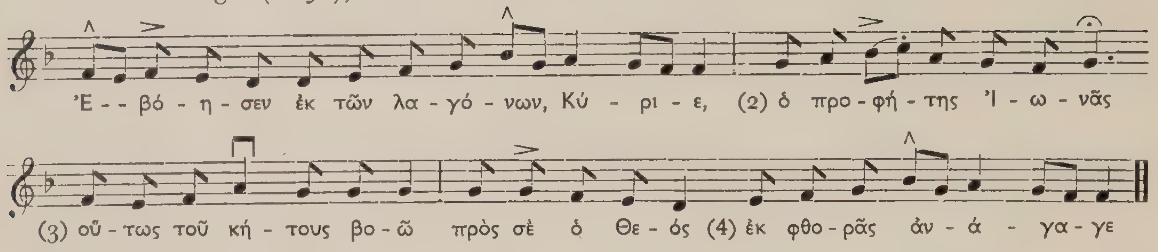
[9] *Ibid.* 34, P. Rebours, *Traité de Psaltique*, 115–119.

[10] *Handbk.* 31.

[11] In Mode III Plagal it has been found simplest to print b-flat as a signature, not to insert it like an accidental, as in other Modes.

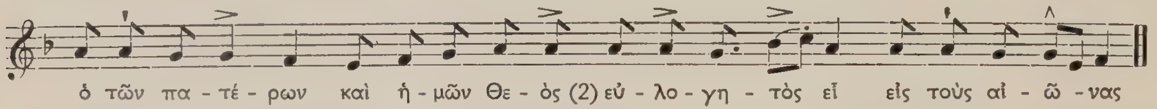
8. ODE VI. H f. 127b.

Mode III Plagal (*Barys*), from f.


'Ε - - βό - η - σεν ἐκ τῶν λα - γό - νων, Κύ - ρι - ε, (2) ὁ προ - φή - της 'Ι - ω - νᾶς
(3) οὕ - τως τοῦ κή - τους βο - ῶ πρὸς σὲ ὁ Θε - ός (4) ἐκ φθο - ρᾶς ἀν - ά - γα - γε

9. ODE VII. H f. 118b.

Mode III Plagal (*Barys*), from a, Finalis f.

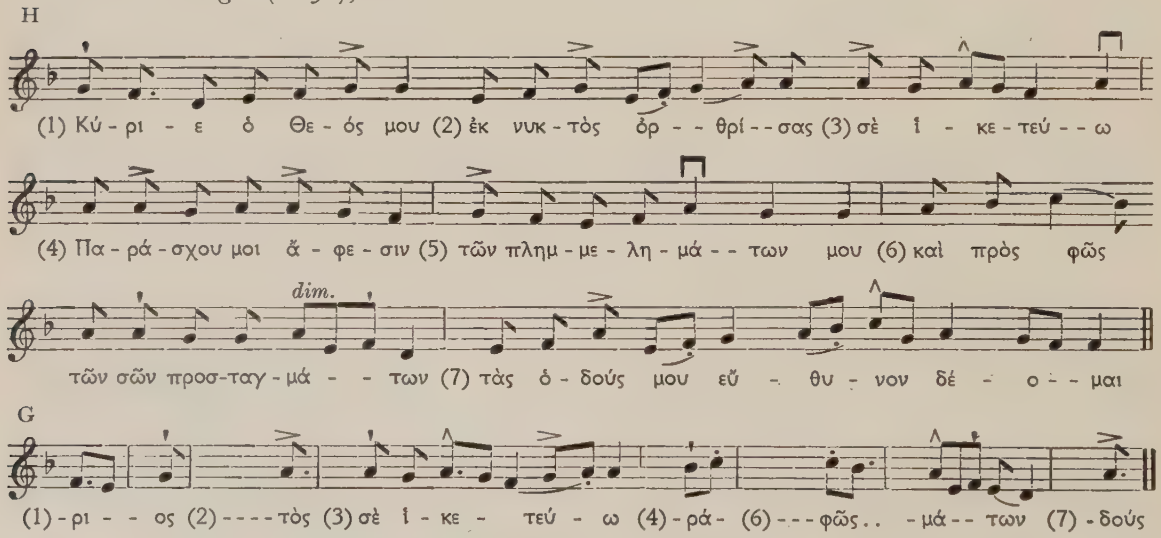

ὁ τῶν πα - τέ - ρων καὶ ἡ - μῶν Θε - ὸς (2) εὐ - λο - γη - τὸς εἶ εἰς τοὺς αἰ - ῶ - νας

Other instances in H, which the reader may easily examine are, for f: f. 119, Ode III, f. 119b, Ode III, f. 121b, Ode II; for a, f. 118b, Ode VI, f. 119, Ode II—I must, however, repeat the warning that there are many mistakes in H, so that all conclusions depend to some extent on correspondence with G.

The third signature is in H alone, and consists of two Apostrophi, Bareia and Oxeia (FIG., No. 22), G always has the ordinary f-signature where H has No. 22; and it is found by trial that the latter also means f. Here is a clear example with scarcely any difference in the melody.

10. ODE V. H f. 115, G f. 208.

Mode III Plagal (*Barys*), from f.


H
(1) Κύ - ρι - ε ὁ Θε - ός μου (2) ἐκ νυκ - τὸς ὀρ - - θρί - - σας (3) σὲ ἱ - κε - τεύ - - ω
(4) Πα - ρά - σχου μοι ἄ - φε - σιν (5) τῶν πλημ - με - λη - μά - - των μου (6) καὶ πρὸς φῶς
dim.
τῶν σῶν προσ-ταγ - μά - - των (7) τὰς ὁ - δούς μου εὔ - θυ - νον δέ - ο - - μαι
G
(1) - ρι - - ος (2) - - - - τὸς (3) σὲ ἱ - κε - τεύ - ω (4) - ρά - (6) - - - φῶς . . - μά - - των (7) - δούς

But how do the *neumes* in signature No. 22 come to mean f? They may be the tail-end of a much longer Intonation, of which the precentor only needed a reminder. Most of the odes with this signature have g as first melody-note; and the formula might have been f-g f e f e d g fe f, of which only the last three notes were written. At any rate the f as

initial note is confirmed by many examples in H: thus f. 119 fin. Ode VII begins g fe f e f f d g; 121b, Ode IV, g fe fe d d e f g; 122, Ode I, g fe f e d g; 122b, Ode V, g f e f g; 123b, Ode VIII, g f e f e d f; 127b, Ode V, g fe fe d f f d f.

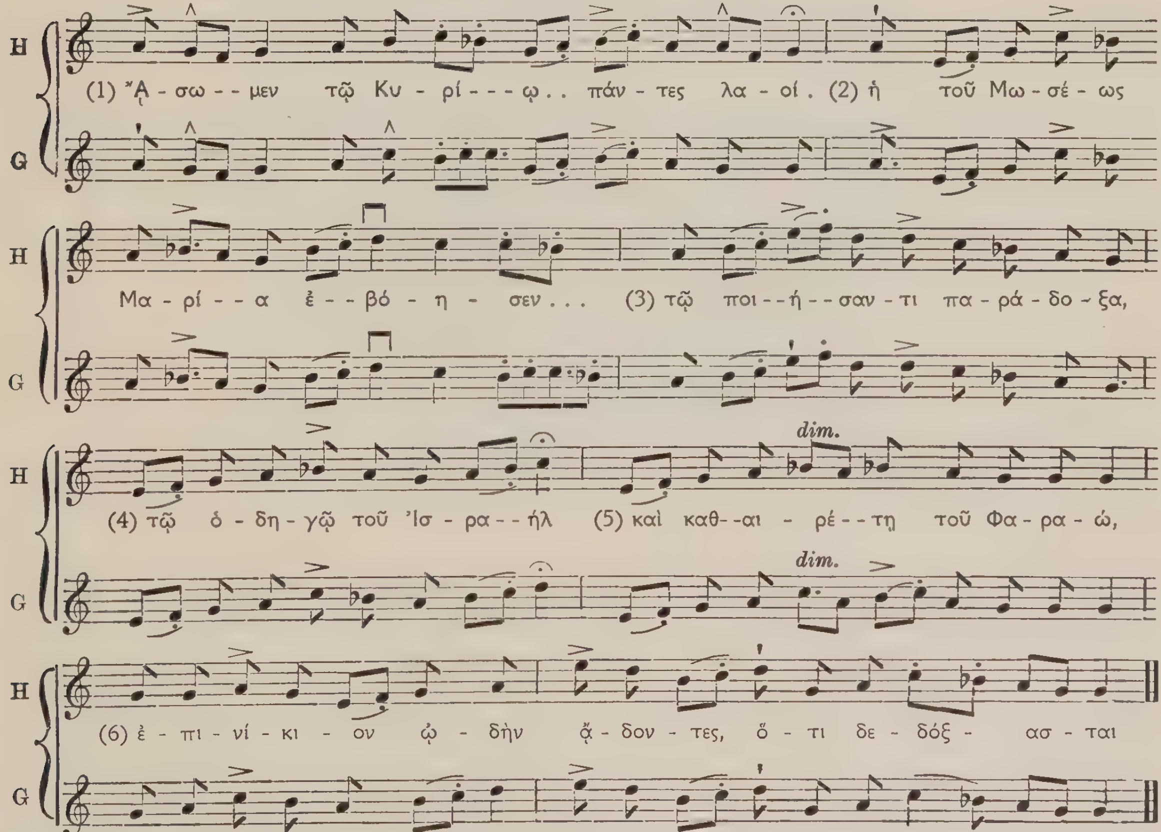
In all these the first interval-sign of the hymn is an ascending second.

Mode IV Plagal. Here, as in the other Modes, I will only deal with the most common signatures. The complete table (but not the musical values) is given in the introduction to the facsimile edition of H.[12] The few medial signatures, given in the footnote, foreshadow the conventional forms that were current in later MSS.

In H by far the most frequent signature for this Mode is an Ison with Diple (FIG., No. 23). In G and elsewhere we find the same form with the number of the Mode (πλ.δ′) standing before it. This means g. The a- form and the c′ form are also much alike in both MSS. and cause no difficulty (see FIG., No. 24 in H = a; and No. 25 in H = c′).[13] I give an example of the a- form: both versions have an Oxeia added to the Ison in the signature. In H, line 3, we must add a Kentema over -ή-. This brings the two MSS. into agreement. In G, line 5 *init.*, is the very rare leap of a seventh downwards: the Apostrophus is annulled, but the Elaphron is added to the Chamele (= 5 + 2). The differences between the versions, except in lines 4 and 6, are unimportant.

11. ODE I. H f. 132b, G f. 248.

Mode IV Plagal, from a; Finalis g.


H
G
(1) Ἄ - σω - - μεν τῷ Κυ - ρί - - - ῳ . . πάν - τες λα - οί . (2) ἡ τοῦ Μω - σέ - ως
Μα - ρί - - α ἐ - - βό - η - σεν . . . (3) τῷ ποι - - ή - - σαν - τι πα - ρά - δο - ξα,
(4) τῷ ὁ - δη - γῷ τοῦ 'Ισ - ρα - - ήλ (5) καὶ καθ- -αι - ρέ - - τῃ τοῦ Φα - ρα - ώ,
dim.
dim.
(6) ἐ - πι - νί - κι - ον ᾠ - δὴν ᾄ - δον - τες, ὅ - τι δε - δόξ - ασ - ται

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[12] *MMB* II, *Hirmologium Athoum*, ed. C. Höeg, 17.

[13] For the usual forms in G and other MSS., cf. *Handbk.* 35.

The Ison. In Codex H the Oxeia is sometimes written above the Ison with accentual value (FIG., No. 26), whereas in the regular usage of the Round System it would be written below the Ison and would lose its interval-value by the law of Subordination [14] (ὑπόταξις). In the Early Byzantine notations the Oxeia usually stood alone in such cases, the precentor being obliged to remember where it had only an accentual effect. In the 12th century the Ison was sometimes added by a later scribe; and its position made no difference to the musical performance. This practice has survived in H.

The shape of the Ison most frequent in H is shown in FIG., No. 27. The hook is thicker and less bent than in the standard form of the Round System. Such a thickened Ison is usual in many MSS. of the Coislin notation (*e.g.* Coislin 220 and Crypt. E.Γ. III) in places where no alteration or tampering by a later hand can possibly be suspected.[15]

Conclusion. The Athos Hirmologium, as has been shown, is an archaic example of the Round Notation and has kept several features belonging to the earlier systems. It is thus of great historical value, and helps us to understand the development of Byzantine *neumes* towards a full and definite scheme of interval-signs and signatures. But there was no breach of continuity between the various stages; and the evidence of H confirms the principles already laid down for the normal usage of the Middle Byzantine notation.[16]

H. J. W. TILLYARD

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[14] Cf. *Handbk.* 21.

[15] In other MSS. there are many examples of such alteration, v. *MMB Transcr.* VI, Introd. xxiii and xxvii. The most striking is the Jerusalem Hirmologium, where whole hymns have been converted from the Early to the Middle Byzantine system. Cf. *Byz. Zeit.* 1937, 355. E. Wellesz in *Mus. Quart.* XXXVIII (1952), 1, 68.

[16] Several books have already been mentioned which I have written for the *Monumenta Musicae Byzantinae.* My final volume, *The Hymns of the Pentecostarium,* is advertised as *en préparation*; but, in point of fact, it is finished and lies in a safe at Copenhagen, at the end of a waiting-list, while funds are lacking for further issues; so that its appearance in the life-time of the author is less than likely. The present article therefore may be my last venture in the field of Byzantine music; and, at such a juncture, I should like to thank the Managing Committee of the British School at Athens and the successive editors, who in spite of the indifference which, until lately, surrounded this subject, have with constant generosity allowed me the hospitality of their pages.

A POLITICAL SHERD

(PLATE 39)

Through the kindness of Dr. Charles Seltman I am enabled to publish an inscribed sherd in his possession, the singular character of which has not hitherto been noticed. Its history is obscure; it was bought, so Dr. Seltman informs me, from a dealer who said that it had been found on the North Slope of the Athenian Acropolis. This provenance may well be correct; the sherd is certainly Attic, and the dealer made no financial gain from his statement; nor, apparently, did he regard the inscriptions as more than a curiosity.[1] The sherd measures 11·6 cm. at its greatest length, and is 4·8 cm. wide at l. 22 of the inscription on the upper surface. It apparently forms part of the rim and body of a plate [2] of the type known as a fish-plate, of which a considerable number exist, both Attic and South Italian, in a complete or fragmentary state, though they have not received much attention from scholars. Most are undecorated, but many have the characteristic and clumsy red-figure decoration, on the

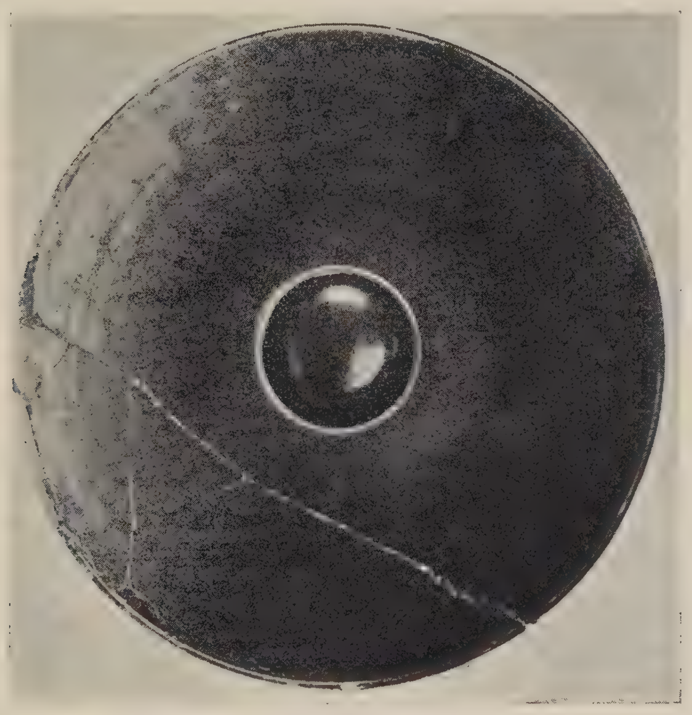

Fig. 1.—Fish-plate in the Museum of Classical Archaeology, Cambridge.

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[1] The peculiarities of the sherd and its inscriptions are such that one might suspect a fake. But (*a*) there is no sign, in its known history, that it was ever worth much in a monetary sense, and (*b*) the skill and knowledge required to produce the inscriptions would surely be more than even an exceptional forger could command, while they lack the purpose that a forger would presumably work for.

[2] In this case *c.* 22·8 cm. in diameter.

upper surface, of fish and marine creatures of various kinds.[3] In the developed type, which seems to have evolved fairly quickly, an overhanging rim, the profile of which varied, formed the edge of the plate, almost masking the central foot; while in the centre of the upper surface, perhaps for drainage purposes, was a circular depression of varying diameter. A complete and undecorated plate of this kind is shown in FIG. 1.[4]

They were a comparatively late introduction to the repertoire of the Athenian potter. An earlier type, without the rim and with a higher foot, may belong in the fifth century, but fish-plates in their developed form seem not to occur at Athens before the beginning of the fourth century, though they rapidly became popular and were imitated in the West.[5] Schefold believes that the developed series may begin as early as *c.* 430 B.C.[6] However, recent discoveries, particularly in the Athenian Agora, seem to indicate *c.* 400 as a *terminus post quem*, and that the sherd with which we are now concerned, to judge from its profile (FIG. 2) and the concavity of its surface, should belong early in the series, *i.e.* to the first decade or so of the fourth century.

There is, however, in the Gallatin Collection (*CVA U.S.A.* 8, pl. 62, 1 *a–b*) a stemmed dish of unusual type, with an upper surface and overhanging rim in general similar to that of the present sherd. The central depression is smaller than is usual on a fish-plate, the profile of the rim is more convex than ours, and there is a zone round the edge of the upper surface filled with a pattern of dots. In the *CVA* the dish is assigned, without reasons being stated, to the sixth century. It is possible that the sherd may be a fragment of a dish of this kind.

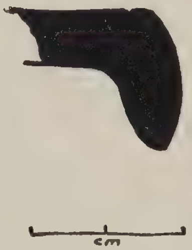

FIG. 2.—PROFILE OF INSCRIBED SHERD (1 : 1).

It will be noted that I have considered the evidence of the pottery strictly on its own merits, without reference to the inscriptions. The fact is that, if the sherd is from a fish-plate, and if we assume the correctness of the accepted fish-plate chronology, the epigraphic evidence is completely at variance with it. A separate examination of the two inscriptions will make this readily apparent.

About 7·7 cm. of the rim preserve the remains of a dedicatory *graffito* in a hand different from, and anterior to, that of the *graffito* on the main surface of the sherd (PLATE 39, *b*). This reads - - - - ΤΑΤΟΣ ΑΝΕ⊕ΕΚΕ - - -. The fullest form of such a dedication would presumably have been *nomen*, *nomen patris*, ἀνέθηκε, *nomen dei*.[7] The first five letters might preserve the ending of the patronymic in the genitive. Names in - - τάτης are, however, rare, and those that do exist belong to the first declension: the only Attic instance known to me is Ἐπ[ι]στάτ[η]ς in *IG* II^2 2398, l. 14 (Kirchner, *Prosopographia Attica* 4946), but Προστάτης occurs on Delos.[8] We should therefore conclude that there was no patronymic, and that - - τατος represents a nominative ending, *e.g.* Ἐπίστατος (*SEG* II 158) or Εὐρύστατος (*Inscr. Cret.* II p. 189, no. 7). This is, I think, preferable to the supposition that the dedicator's name should be read as - - - σ]τ⟨ρ⟩ατος, with the ρ omitted *per errorem*—the more so if, as seems likely, the dedication was of an unusual type of vase, and to be dignified, therefore, by a rather careful dedicatory inscription.

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[3] *Cf.* L. Lacroix, *La faune marine dans la décoration des plats à poissons* (Verviers, 1937). There is one in black-figure, D. M. Robinson, *Olynthus* V 81, no. 64 (pl. 55).

[4] Museum of Classical Archaeology, Cambridge, no. CAM 257. For other illustrations see *Olynthus* V, pls. 190–1, XIII, pl. 94. On fish-plates in general, V 143 (no. 231), XIII 124–31.

[5] *Cf.* Lacroix, 19–20. I am indebted to Miss Lucy Talcott and Mr. Peter Corbett for valuable advice on the ceramic problem.

[6] K. Schefold, *Untersuchungen zu den Kertscher Vasen* 11 and pl. 1. The possibility finds some support with H. R. W. Smith, *AJA* L 1946, 436.

[7] For this formula see the examples in A. E. Raubitschek, *Dedications from the Athenian Akropolis*, nos. 75 and 77, or with a slight variation nos. 34, 102, 109, 169.

The writing is old-fashioned. *Sigma* has three bars and *theta* a central cross, the central bar of *alpha* is angled, and the *epsilons*, though lacking the archaic tail, still have the three ' horizontals ' inclined downwards. *Nu* is of an archaic cast, with the third stroke at a wide angle from the second; *kappa* also is reminiscent of the earlier decades of the fifth century. Indeed, in stone-cut inscriptions the parallels for these forms occur most readily in the pre-Persian War dedications from the Acropolis. A comparison with fifth-century *ostraca* (from the nature of things less carefully written) produces as the closest parallels those attributable to the ostracisms of the eighties and seventies of the century, Xanthippus, Critias, Acharnion, Themistocles, etc.[9] The single sherd of Eucrates so far published [10] shows more modern forms than this dedication, yet it, too, is attributed to the first half of the century, while the old-fashioned form of A survives in *ostraca* of Cimon (461). It is, of course, permissible to suppose that the dedicator of this plate was an old man who clung to an old-fashioned style of writing; but, while making every possible allowance, the dedication can hardly be said to have been made later than *c.* 435 B.C.

If this is so, we must assume either that plates of this type were manufactured by Athenian potters earlier than is generally believed, or that the older styles of Attic letter-forms were preserved in ordinary use by some conservative Athenians down to the end of the fifth century. By 400, however, such forms are shown by the evidence of datable *graffiti* to have been long since abandoned, and official and private bronze and stone inscriptions had by degrees given up all of them by the time of the Thirty Years' Peace. It is perhaps less inconvenient, though admittedly awkward, to postulate an early instance of this plate which, possibly because it *was* unusual, was selected for dedication.

On the upper slightly concave surface of the sherd are the remains of twenty-five lines of incised writing, with the lower tip of the first letter of one line more at the top. The lines run from the curved edge towards the centre of the plate, and what we have is a wedge-shaped fragment of a longer text —how much longer it is impossible to say. Each line forms as it were a radius of the circular plate, at an angle of roughly ninety degrees to the edge, but it will be seen from the photograph (PLATE 39, *a*) that ll. 1–4 slope downwards at a slightly more acute angle. By ll. 9–10 an exaggerated compensation has been made for this and for the curve of the plate, and it is not until l. 13 that the writing runs in fact along the true radius.

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[8] *IG* XI 2 124, l. 37. Ἐπιστάτης perhaps also from Syria in *SEG* II 811.

[9] Acharnion, *Hesp.* Suppl. VIII, pl. 57, no. 1.
Critias, *Hesp.* Suppl. VIII, pl. 58, no. 12.
Xanthippus, *e.g. Hesp.* V (1936), 40, fig. 39, X (1941), 3, fig. 3.
Megacles, *e.g. Hesp.* XV (1946), pl. 25, no. 1, *Kerameikos* III, pl. 21, no. 4.
Aristeides, *e.g. Hesp.* XV (1946), pl. 27, nos. 14–5.
Themistocles, *e.g. Hesp.* Suppl. IV 32, fig. 24, *Kerameikos* III, pl. 21, no. 5.

The crossed theta still occurs in *ostraca* of the ostracism of 443. On these ostracisms see now A. E. Raubitschek in *Actes du deuxième congrès d'épigraphie grecque et latine* 59–74, and literature quoted in *SEG* X 390.

[10] *Hesperia*, Suppl. VIII, pl. 58, no. 9. *Cf.* that of Thucydides in J. Carcopino, *L'Ostracisme Athénien*^{2}, pl. II no. 1.

Towards the end of the sherd the angle again begins to resemble that of ll. 1–4. The letters are neatly scratched, without guide-lines or apparent aids of any kind. They average 0·3–0·4 cm. in height, but their width and spacing show greater variety. L. 10 has six letters in 2·5 cm., and is the most liberally spaced: l. 18, the most closely written, includes 8½ letters in the same distance. Neither line includes an iota, two of which can fit into the area of any one other letter (l. 19). The presence or absence of iota in the missing part of the inscription makes it impossible to give more than an approximate estimate of the number of letters to be restored on the right. There can obviously be no certainty as to the number of lines missing above and below this fragment.

The estimate of the number of letters missing on the right is further limited by two more serious factors. Firstly, the lines converge as they progress, some more sharply than others, and secondly, the depression in the centre of this type of plate would presumably have set a limit to the space available. A comparison with other plates of the same kind [11] suggests that the space available for the inscription between the edge of the plate and the outer edge of the central depression was *c.* 8 cm. On the scale of l. 10 this would admit ±21 letters to a complete line; on that of l. 18 there would be room for ±30 letters. There is, of course, no guarantee that the original written surface did in fact extend as far as the central depression, but, as is more fully shown below, it has proved impossible to suggest any satisfactory sense for the text unless on the supposition that it did. Ll. 1–5 may or may not have run their full length to the central depression; the estimates of missing letters inserted in the transcript are based on the supposition that they did, and therefore represent a maximum. There follow four transitional lines, correcting the angle, which would so have converged upon the lines already written that the number of letters missing must be greatly reduced. The estimate of missing letters is based upon a calculation of the space which could be filled before it became impossible to insert another letter on the same, or almost the same, scale. L. 10 probably resumed the full length of line, but the spacing of its letters, if maintained, would allow it to contain little more than l. 9.

From l. 11 to l. 20 it is, I think, clear that the lines would not have converged so seriously as to make further progress impossible before the central depression was reached, and the estimate of missing letters is based on complete lines in these cases. Below l. 21 it is equally clear that the lines of writing make such an angle with the true radius of the plate that they would, if protracted, have missed the central depression altogether. It is therefore unwise to make any suggestion as to the number of letters missing to the right of the preserved parts of these lines. Even so, the figures given throughout can be no more than an approximation, and there is such latitude of possible space and sense that I have printed neither significant restorations nor accentuation in the text which follows, tempting though it is to insert both.

/[– –]
πρ̣[– – – – – – – – – *c.* 22 – – – – – – – – – –]
οσα[– – – – – – – – – *c.* 21 – – – – – – – – – –]
ενα [– – – – – – – – – *c.* 20 – – – – – – – – – –]
5 και τ[– – – – – – – *c.* 18 – – – – – – – –]
εσται α̣[– – – – *c.* 5 – – – –]
σον μερ̣ [ος ? – – – – *c.* 7 – – – – –]
νυοντω[ν – – – – – *c.* 7 – – – – – –]
ην. εδεχ[– – – – – – – *c.* 12 – – – – – – –]

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[11] That in FIG. 1 has a diameter larger than that of the original from which the sherd came—26 cm. as against *c.* 22·8 cm.

10 Νυμφων ι[ερ – – – – – – c. 12 – – – – – – – –]
σων ευ τον δ[ημον ? – – – – – – c. 10 – – – – – –]
νον παντα [– – – – – – – c. 15 – – – – – – – – –]
οι προβουλοι α̣[– – – – – – – c. 17 – – – – – – – – – –]
κειμενα δυν[– – – – – – – – c. 15 – – – – – – – – – –]
15 διαλυσωνται [– – – – – – – – c. 15 – – – – – – – – –]
εργαζομενοις [– – – – – – – c. 15 – – – – – – – – – – – –]
σαν της πολεως [– – – – – – – c. 15 – – – – – – – – – –]
α τους ορκους και [– – – – – – – – c. 16 – – – – – – – – –]
θεν τωι ιερω του̣[– – – – – – – c. 14 – – – – – – – – – –]
20 λωνος. πολλα [– – – – – – – – – c. 15 – – – – – – – – –]
διται κεν τωι α[– – – – – – – – – c. 15 – – – – – – – – – –]
επιψηφισαντες[–]
[.] ι̣ ἐ̣π̣᾽ αυτωι τε κα[ι – – – – – – – – – – – – – – – –]
[. . . c. 5 .] ι̣ π̣αρ᾽ ᾽Αθα[ν– – – – – – – – – – – – – – – –]
25 [. . . . c. 8 . . . .] ι̣ εχων[– – – – – – – – – – – – – – –]
[– – – – c. 10 – – – –]τα[– – – – – – – – – – – – – – – – – –]
– –

This long *graffito* is a masterpiece of care and neatness. The difficulty of scratching letters on a small scale has caused the painted surface to flake in places, but the writer has never lost control of his instrument, and has preserved an overall evenness of line and spacing. The character of the surface has, however, compelled him to modify the forms of some of the letters, and although he uses the Ionic script, with Ψ, Ω, H = η, Γ = γ, Λ = λ, etc., he has retained the old three-bar *sigma* and the *alpha* with an angled centre stroke. In writing of this size Σ would have been understandably difficult, and there would have been a danger that, in trying to produce A, the paint would have flaked off the central triangle, as indeed it has done in ll. 16 and 18. For similar reasons, no doubt, V is used instead of Y (except in l. 13), and ⊖ for ⊙.[12] There is, however, just a possibility, if the hypothesis below (pp. 198–9) be accepted, that these forms were to some extent a conscious archaism reminiscent of earlier and less democratic days, and that, in that case, they served sentiment as well as utility.

Iota adscript may be omitted. X (= *chi*) is apparently twice used; but its archaic form + occurs twice (ll. 9, 20), as a mark of punctuation. Punctuation in this form is a rarity, and only two examples have come to my notice hitherto, both of them in Cambridge.[13] They presumably act as full stops here, and have been so transcribed, marking the beginning of a new sentence.

Apart from these exceptions, all of them readily explicable, the writing is of a general character which suggests a date in the last quarter of the fifth century. Archaic forms are still remembered, but the Ionic script is the normal vehicle of expression. The neatness and consistency of the style reflect the best period of Attic monumental epigraphy. It is a skilled, cultured, and efficient hand, and its owner obviously felt that the matter about which he was writing was important and required careful expression.

It has, so far, been suggested that the plate of which this sherd is a fragment was dedicated some time in the third quarter of the fifth century, and was re-used either whole or piecemeal during the last quarter. A closer dating is, however, possible from the content of the *graffito*. In l. 13 the words οἱ πρόβουλοι are happily preserved in full. This at once suggests a connection with the board of ten, instituted late in 413 after the disaster in Sicily, so that the δῆμος might be restrained from any further rashness (Thuc. VIII 1, 3).[14] In the revolution of 411 these ten were, according to Aristotle (29, 2), given twenty colleagues and became a board of ξυγγραφεῖς. The new board was given plenary powers (Thuc. 67, 1) and presented its proposals to an assembly specially convened at Colonus. The details of these events are obscure, and have been the source of much argument. What is clear is that, having made at Colonus the single proposal to abrogate the γραφὴ παρανόμων, and having thus given Peisander the opportunity which they had no doubt jointly arranged, the πρόβουλοι are heard of no more. Nor does any other body of πρόβουλοι occur as a possible alternative. Unless, therefore, the πρόβουλοι of this inscription are an otherwise unknown board with unknown duties, or unless the sherd is referring to the known πρόβουλοι and their activities as to an affair already past, both of which suppositions appear to be unlikely, the inscription must be dated between late 413 and May 411 B.C. More than that cannot be said with precision, but it is suggested below that this document may perhaps be more specifically attributable to the period immediately preceding the revolution of the Four Hundred.

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[12] For ⊙ with a single cross-stroke see now M. Guarducci, *Arch. Class.* IV (1952), 147–8.

[13] Cambridge. Museum of Classical Archaeology, NA 239: Fitzwilliam Museum, *CVA* Cambridge II, pl. XX no. 7. Both are from Naucratis and probably by the same hand.

That we seem here to be concerned with events of the future and not of the past is perhaps indicated by ἔσται in l. 6, and by the aorist subjunctive διαλύσωνται in l. 15, which may well be interpreted as a final clause in primary sequence. In this detail of future action some event is clearly conditional on the putting of a previous motion to an assembly—ἐπιψηφίσαντες. The assembly is presumably the Athenian ἐκκλησία, since it was the ἐκκλησία's business which the πρόβουλοι had to scrutinise beforehand. That the voting body, as it seems, is not that of a deme or other subdivision, secular or religious, of the polis is further indicated by the reference to the polis itself in l. 17. The motion would therefore be formally put by the prytaneis, and Aristotle (29, 4) notes expressly the enactments of the ξυγγραφεῖς, (i) that the prytaneis were to bring forward any motion laid before them, and (ii) the suspension of the γραφὴ παρανόμων. Thucydides (67, 2) appears to mention the second of these only, although in fact he runs the substance of the two together, and regards the motion as put by the ξυγγραφεῖς themselves, probably meaning no more than that it was effectively their motion. Ἐπιψηφίζειν is the normal word for the putting of a motion, and it is presumably no more than coincidence that it is also used in Aristotle's account. Thus we may be reasonably certain that the future events discussed in this *graffito* are political in character.

Although its contents in some way look to the future, it is clear that the document is not simply a record of a public decision already taken but applying to a future operation—not, for instance, the draft of a ψήφισμα produced for the stonecutter by the γραμματεὺς τῆς βουλῆς. The style and phraseology, so far as the fragmentary nature of the inscription can show, are not those of public decrees, and in any case such a draft would be more likely written on papyrus or a tablet or λεύκωμα or *pinakion* of some kind which could subsequently be re-used. Nor would one expect the minutes of the βουλή or any other public committee to be recorded in this way. The recognisable words of the fragment, in their repetition of temples, deities, and oaths, may perhaps suggest that plans for future action have been confirmed by religious sanction or possibly decided upon in some sacred precinct—a convenient meeting-place if the numbers involved are not large. At any rate, for these or other reasons it is noticeable that precincts figure largely in this brief text (see below). Those planning the action are perhaps the ἐργαζόμενοι (? συν | εργαζόμενοι) of l. 16, and it may be that διαλύσωνται indicates what it was they were intending to do, and the aim for which the oaths of l. 18 had been taken.

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[14] In this paper references to Thucydides are to Bk. VIII, and those to Aristotle are to the Ἀθηναίων Πολιτεία. In the latter case, I have throughout written 'Aristotle' as being more convenient, but without prejudice to the question of Aristotelian authorship, upon which the recent views of C. Hignett, *A History of the Athenian Constitution to the end of the fifth century* (Oxford 1952), esp. pp. 29–30, have much to commend them.

Διάλυσις might involve, in such a context, either a ' breaking-up ' or a ' reconciliation '. Those contemplating action could be intending to dissolve the existing *status reipublicae*, to abrogate the constitutional safeguards (as was in fact done at Colonus), or to reconcile the rivalry of faction in the city. If the πρόβουλοι are the subject of διαλύσωνται, the second suggestion is a distinct possibility. The removal of the checks would then make it possible for the ' fellow-workers ' to put an end to the existing constitution and to the discord (? τὴν ὑπάρχου] | σαν τῆς πόλεως [στάσιν - - -) as they have pledged themselves to do. It is, in any case, noteworthy that the words lack the force of the vocabulary which the main literary sources use for the στάσις of 411. Aristotle and Thucydides narrate the events from different viewpoints, as Sartori has recently pointed out,[15] the former treating the change of régime as a series of legally proper enactments, the latter as a revolution pure and simple. Aristotle, though more restrained, speaks of the κατάλυσις of the βουλή (32, 1) (later also of the Four Hundred themselves), while Thucydides frequently refers to the κατάλυσις τοῦ δήμου (47, 2; 63, 3; 64, 4; 68, 1; 86, 2), for which ξυνωμόται are responsible (48, 2; 69, 2: *cf.* also Andocides I 36). Thucydides was not in sympathy with the post-Periclean demos any more than was Aristotle, but these are hardly the words which one would expect the oligarchs, self-styled χρηστοί, to have used of themselves. It would be understandable if they preferred to speak of their political aims not as a κατάλυσις (*eversio*) but, more gently, as a διάλυσις (*dissolutio*), and to regard themselves not as ξυνωμόται but as ξυνεργοί in an honourable cause.[16]

The mention of the ἱερόν in l. 19, belonging apparently to a masculine deity, is the second of its kind. The precinct of the Nymphs has already occurred, and that of Apollo may make a third, if - - λωνος in l. 20 forms part of Ἀπόλ] | λωνος, and unless Apollo is the deity to whom the ἱερόν of l. 19 belongs. In l. 21 occur the final letters of what may be Ἀφρο] | δίται, a fourth reference to a deity or precinct. If so, the α for η (perhaps recurring in l. 24) is strange, and although there was a section of smart society at Athens which affected Laconian manners one could not attribute this variant in an otherwise regular Attic–Ionic text to misplaced Laconising enthusiasm.[17] L. 21 is in fact difficult to interpret. Κεν appears to be for κ⟨αὶ⟩ ἐν. Τῶι α - - seems to indicate yet another locale, and it is tempting to suggest τῶι ἄ[λσει]. The precinct prominent in the overthrow of the democracy in 411 was indeed the grove of Poseidon, and the - - λωνος mentioned above could equally well form the ending of Κο] | λωνός, thus giving a precise explanation of the location of the ἱερόν in question.

It has been necessary, indeed unavoidable, in considering the language of this fragment to include some reference to a possible interpretation of the circumstances deducible from it. The impossibility of attempting any worthwhile restoration makes any interpretation of this or any other kind extremely conjectural, and lays it open to a justifiable scepticism. We do not know how much of the text is missing, although the difficulty of producing sense of any kind, even by a *jeu d'esprit* of restoration, leads one to believe that the text must have continued as far to the right as it could, *i.e.* up to the central depression wherever possible. We must assume that it formed a continuous piece of narrative prose.

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[15] F. Sartori, *La Crisi del 411 A.C. nell' Athenaion Politeia di Aristotele* (Padova 1951), 8.

[16] For these contrasted senses of κατάλυσις and διάλυσις *cf.* Plato *Laws* XII 945c and IX 864d. Διάλυσις is frequently used of ending wars and reconciling enemies.

[17] - - διται presumably is a word-ending, and there is not much choice. Συνοδῖται would have a properly sinister ring to modern ears. But it may be necessary to seek the ultimate epigraphic refuge and postulate a *lapsus calami*.

In the months preceding the crisis of the revolution in 411, the oligarchs and crypto-oligarchs had been extremely active. The organisation of Antiphon and Peisander had welded the ἑταιρεῖαι into efficient action-groups, enemies of the revolutionaries had been eliminated, and the δῆμος in general had been reduced to a state of fear and tension, terrorised not only by the murders but by the general insecurity, the uncertainty of knowing friend from foe, and the sudden realisation that former democrats had become or might prove to be oligarchic sympathisers. The strength of the oligarchs was particularly that they knew and could have confidence in one another, but their activities were of necessity covert; secret meetings, secret groups, secret instructions served their purposes and had the effect of unnerving their opponents. They could, and did, act together at the right moment, and the assembly at Colonus was the planned climax to which their activities were leading up. To obtain this concerted action was not easy, and perhaps represented the major achievement of the planning for which Thucydides praises Antiphon; but we lack details of how this great task was managed. It might be supposed that the leaders of the ἑταιρεῖαι, men such as Euphiletos four years earlier, acted as liaison officers between the central planners and the separate action-groups. Accuracy and co-ordination of plan, and the necessity to pass on precise instructions, might make it desirable, especially when providing for the Colonus assembly itself, the culmination of their hopes, to write down the details to be communicated to the groups of conspirators who would, probably for the first time, appear as a united body at that assembly. A reminder of the objects of the conspiracy, a note of action already taken, and of action to be taken, so that there should be no misunderstanding—all this could be briefly outlined on a sherd which could be concealed under the cloak and smashed or buried if necessary, but which yet formed a clear record on an object readily available, and more manageable and durable than a tablet or a piece of papyrus.

If this be so, we may perhaps see such a document in the present *graffito*. It would unfortunately add little if anything to the historical account of the revolution of 411, with which, in the manner suggested or in some other way, it seems to be connected. It can do nothing to resolve the conflict of the accounts presented by Thucydides and Aristotle, and gives no additional detail of procedure to supplement them.[18] The most it would do would be to confirm that the probouloi were closely involved in the Colonus assembly, either moving the abrogation of the γραφὴ παρανόμων themselves or at least convening the ἐκκλησία at which it was moved. Aristotle's account of the role and number of the ξυγγραφεῖς, reinforced by the indications of Lysias (XII 65) and the Atthides (*vide* Harpocration *s.v.* 'συγγραφεῖς'), has proved the more popular with scholars; and Thucydides' remark that they were αὐτοκράτορες is generally accepted, though ignorance, misinformation, confusion, or textual errors are variously held to have resulted in their number being given as ten, the same as for the probouloi. If we follow Aristotle, it would be understandable that the ξυγγραφεῖς could be loosely referred to as πρόβουλοι in a document of this kind, especially as the probouloi properly so-called were members of the board. If the ξυγγραφεῖς were not αὐτοκράτορες, as in Aristotle's account they were not, the probouloi may have had to summon the assembly (or instruct the πρυτάνεις to summon it) in virtue of being probouloi, so that the larger body of which they formed part could carry out its duty. The probouloi must have been competent to summon the assembly whether in fact they were themselves ξυγγραφεῖς or not.[19] But Sartori (*op. cit.* 17–20) finds it possible that Thucydides' ten ξυγγραφεῖς *were* the ten probouloi; in that case they would both summon the assembly to Colonus and put the vital motion. According to Miss Lang, Thucydides' ten ξυγγραφεῖς in fact did this, the thirty being a separate board which had played its part in earlier events. The present text could support any of these interpretations.

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[18] For the controversies over the events of 411 see most recently Mabel Lang, *AJP* LXIX, 1948, 272–89; M. Cary, *JHS* LXXII, 1952, 56–61; C. Hignett, *op cit.* Appendix XII; F. Sartori, *op. cit.*; G. Vlastos, *AJP* LXXIII (1952), 189–98; A. Fuks, *The Ancestral Constitution* (London 1953).

It is admittedly disappointing that no further light is thrown on these details; nevertheless, this sherd, itself a witness of the turbulent events of the oligarchic revolution, is the most vivid and authentic piece of evidence that we possess, if the assessment of its date and character outlined above is valid. Written possibly on the instructions of Antiphon himself, and passed from one conspirator to another in preparation for the greatest moment of the *coup d'état*, it would bring us, as no other evidence has so far had the power to do, into a new and direct contact with the events themselves; and the contact would be, it may be added, from an angle which, in justified admiration of the Athenian democracy and its achievements, we are greatly inclined to leave neglected and unappreciated.[20]

A. G. Woodhead

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[19] *Cf.* U. Kahrstedt, *Untersuchungen zur Magistratur in Athen* (Stuttgart 1936), 292.

[20] I should like to express my gratitude to all those who have read this paper in MS. or proof, or with whom I have discussed the complex problems of this sherd—in particular to Prof. Sir Frank Adcock, Prof. A. H. M. Jones, Dr. M. N. Tod, and Messrs. J. M. Cook, R. M. Cook, G. T. Griffith, and A. M. Woodward.

It may be well here to elaborate a little further the considerations mentioned briefly in note 1. It would be convenient in many respects if this sherd could be set aside as spurious, but there seems no real ground, other than sheer surprise, for taking refuge in this solution. The recent history of the sherd shows no attempt at profit or mystification, so that there is no obvious reason for forging the inscriptions. It is true that at the bottom (though not at the side) some letters dig more deeply into the edge of the sherd; but the plate may have been already cracked when the inscription was scratched on it.

THE ATTIC SILVER MINES IN THE FOURTH CENTURY B.C.

The recent publication, by Miss M. Crosby (in *Hesperia* XIX 189–312),[1] of all the extant lists found at Athens belonging to the accounts of the *poletai*, and relating to the leasing of mines in the Laurion region, justifies a fresh examination of the administration and importance of the mines. A full topographical study, for which there is a considerable amount of material, can hardly be pursued except on the ground; the same is true of an archaeological survey of the actual mines and surface establishments. There are, on the other hand, certain problems of terminology, administration, and economic significance which are independent of such a survey, and may, indeed, help as a preliminary to it, and serve, as well, to supplement Ardaillon's work [1a] where it seems to be most out-of-date. Such problems are considered in the following study, the chief material being the lease lists so admirably published by Miss Crosby, joined to such information as may be gained from other sources.

The fragmentary character of the lease lists makes it necessary to qualify all conclusions based on them, and for this reason an effort has been made to distinguish the different sources of information and learned comment, and in interpretation to indicate as clearly as possible the varying degrees of certainty or probability which exist.

A study of certain controversial terms used in relation to the mines (I), which incidentally involves some consideration of the property rights involved (pp. 200–09), is followed by an account of their administration (II), including (*a*) the *poletai* and the lease lists, especially the state of preservation of the latter and their value as evidence (pp. 210–16), (*b*) location and boundaries (pp. 217–24), (*c*) tenure and system of payment (pp. 224–39): (i) a consideration of the theories of those scholars who have dealt with this problem (pp. 227–31), and (ii) the evidence of the lease lists (pp. 231–9). An attempt is then made to assess the economic importance of the mines, by a study of the individuals involved as mine operators or property owners (III) (pp. 239–46), and by a consideration of the mines against the general background of the fourth century (IV) (pp. 247–54). The earlier history of the mines is reserved for separate treatment.

I. TERMINOLOGY: *METALLON* AND *ERGASTERION*

The term μέταλλον is used as an unambiguous generic term for a 'mine', with no attempt to distinguish between the approach works on the surface and the galleries actually opening up

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[1] The inscriptions are hereafter referred to by number, *e.g.* Crosby 1. Additional references to *Hesperia* XIX, V (for the new fragment of *IG* II^2 1582), X (for the text of Crosby 1), and *IG* II^2 are given when necessary.

[1a] Ardaillon, *Les Mines du Laurion* (Paris, 1897), which remains the chief work on the archaeological and technical side. More recent works draw their material on these aspects of the mines from Ardaillon or earlier writers whom he uses. Orth's article 'Bergbau' (*RE* Suppl. Bd. IV (1924), 108–55) contains a useful summary of technical matters, based mainly on Ardaillon. Other aspects of Attic mining are treated less well and not without the quotation of irrelevant passages. Blümner's article 'Silber' (*RE* III (2nd Series), 13–23) also provides a useful summary of material on the sources, working (*cf.* the same author's *Technologie* IV), and use of silver. It is not without errors of detail, especially on the administration of the Laurion mines. Blümner certainly underestimates (18) the importance of sources of silver other than Laurion, and yet depreciates the importance of Laurion (20). R. J. Forbes, *Metallurgy in Antiquity* (Leiden, 1950), has a long bibliography of works on silver and lead (219–30), mainly technical. He is not concerned with the organisation and administration of mining, and refers only very briefly to the Laurion mines. Another recent work of very wide scope, H. Wilsdorf, *Bergleute und Hüttenmänner im Altertum bis zum Ausgang der römischen Republik* (Berlin, 1952), is a compilation of some technical interest, in which, however, it is difficult at times to discover the writer's sources or the period and region of which he is writing. Laurion is dealt with 119 ff. A. M. Andreades, *A History of Greek Public Finance* (Cambridge, Mass., 1933), I 269–73, gives a brief and somewhat muddled summary.

the seam of ore. The approach works, as naturally follows from the character of the mining area,[2] could take the form of a ‘ drift ’ (most appropriate to the working of the ‘ first contact ’,[3] which seems to have been readily accessible from the surface), or of a shaft, often of great depth (to give access to the ‘ third contact ’ [4]), fitted when in use with wooden ladders and equipment to raise and lower ore-baskets. In the mine leases and elsewhere terms are used, derived from τέμνειν and its compounds,[5] which seem to refer to these approach works. In two cases [6] the word κατατομή is related to a mine in some uncertain connection. In a very fragmentary passage it is clearly indicated as a boundary,[7] and is therefore not just a shaft, unless the boundary indication is a very rough one. In yet another case [8] it seems to belong to a mine adjacent to the one delimited in this lease record, and is therefore certainly connected with the surface land. It can certainly be something distinct from the *metallon*.[9] The compound ἐπικατατομή is not necessarily a surface, or partly surface, cutting,[10] and approaches the meaning of συντομή ‘ gallery ’.[11] The verb ἐπικατατέμνειν appears in the well-known Demosthenic crux,[12] relating to the μεταλλικὸς νόμος: ἂν ἐπικατατέμνῃ τῶν μέτρων ἐντός. It clearly means the making of an additional cutting, almost certainly below ground (see below p. 220). Another reference in the same passage to offences within the scope of the μεταλλικαὶ δίκαι: [13] τὰς μεταλλικὰς εἶναι δίκας . . . τοῖς ἕτερον συντρήσασιν εἰς τὰ τῶν πλησίον, seems to bear this out.

Mines (not necessarily the silver mines alone) are distinguished into categories both in the literary sources and in the lease lists and other epigraphical documents. In the Aristotelian Ἀθηναίων Πολιτεία, where the functions of the *poletai* are enumerated,[14] it is stated ‘. . . . καὶ τὰ μέταλλα πωλοῦσι . . . καὶ κυροῦσιν, ὅτῳ ἂν ἡ βουλὴ χειροτονήσῃ, καὶ τὰ πραθέντα μέταλλα τὰ τ’ ἐργάσιμα τὰ εἰς τρία ἔτη πεπραμένα καὶ τὰ συγκεχωρημένα τὰ εἰς [ῑ] ἔτη πεπραμένα.’ which is Kenyon’s text (*Aristotelis Atheniensium Respublica*, O.C.T., 1920), where Kenyon prefers ῑ to γ̄ [15] and the συγκεχωρημένα of the papyrus rather than συγκεχωσμένα, the conjecture of Busolt and Poland. The increased number of lease lists now available confirms what seemed to be the case before, that there were three classes of mines: καινοτομίαι, ἐργάσιμα, ἀνασάξιμα, the last in some cases further characterised as παλαιά. The passage of Aristotle, which names only two categories, has in common with the lease lists the *ergasima*, which must mean ‘ in use or occupation ’,[16] indicating actual exploitation rather than potential. *Kainotomia* has the clear and obvious meaning of new mining operations;[17] the term does not appear in the passage of Aristotle, and is not clearly to be understood as included in either term there used. It has been argued[18] that the term *metalla ergasima* includes *kainotomiai*,[19] but no argument is required to show that the payments made on the two categories of mines must have been very different. *Kainotomiai*, as a separate category, seem to have been omitted from the Aristotle passage, unless they are to be included in συγκεχωρημένα. The remaining category, the *anasaxima* and *palaia anasaxima* of the lease records, it is natural to attempt to equate with the Aristotelian συγκεχωρημένα. It is to be noted here that Oikonomos and Kirchner, the editor of *IG* II^2, prefer the συγκεχωσμένα of Busolt and Poland. The general sense of συγχώννυμι is 'fill up', 'demolish', and so the meaning 'old mines' is given to συγκεχωσμένα as 'filled up' and abandoned. It is not, however, clear that abandoned mines were or could be filled up without great expense, and συγκεχωσμένα has no striking advantage over the συγκεχωρημένα of the papyrus, unless, as is just possible,[20] the term be translated 'heaped up', 'banked up', of the spoil banks of a working mine: but this gives no necessary difference from *ergasima*.[21] συγχωρεῖν provides at least as good a description for mines which are not going concerns, and some such term seems to be needed in the Aristotle passage to provide a contrast to *ergasima*. Συγχωρεῖν numbers among its meanings (with *accus. rei*) 'concede', 'give up', and here συγκεχωρημένα would mean 'conceded', 'given up'; *not* in the sense of a mining 'concession' by the *poletai* (in which case συγκεχωρημένα are the equivalent of *kainotomiai*, which is unlikely), but in the sense of cession or surrender by the former lessee.[22] The reasons for such surrender may be various: the chief would probably be a failure to make a *sufficient* profit in comparison with other forms of activity, or a failure to find sufficiently rich ore. Either reason, coupled with the need for expenditure of money and labour to put the mine back into profitable activity, would justify for συγκεχωρημένα a longer lease from the *poletai* than for *ergasima*, hence the ῑ (=10) as the better reading of the passage of Aristotle.[23] The same arguments would indeed apply to *kainotomiai*, but with the difference that, whereas capital expenditure would be involved on approach works, as well as luck in finding a rich deposit of silver ore, in the case of *kainotomiai*, the factors involved in συγκεχωρημένα would be not so much capital expenditure as luck in finding a rich deposit, fluctuations in the price of silver (which Xenophon took to be rare),[24] and variations in the profit to be gained from other types of investment (for it is clear enough that mining was not regarded as always a profitable enterprise). There was clearly a need for the lessee of a συγκεχωρημένον mine to be protected for a reasonable period from competition on the part of those who would seek to replace him if his speculation began to show a good profit,[25] and this period should clearly be longer than when the lessee is bidding for the lease of a mine of known productivity (*ergasimon*). Quite apart from the evidence provided by the lease lists, the equitable procedure seems clear enough: where expenditure is considerable and/or results uncertain (*kainotomiai*, συγκεχωρημένα), there should prevail a small payment (of whatever sort the payment might be) and long lease. If a successful strike is made and the lease is renewed or taken over immediately by another (*ergasimon*), the price might fairly be higher or at any rate subject to competitive bidding, and the period of guaranteed tenure shorter (as the three-year period mentioned by Aristotle).

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[2] Ardaillon 13 ff. [3] *Ibid.* 14, 24–7. [4] *Ibid.* 27 ff.

[5] See in LS^9 under κατατέμνω (4) for the sense ‘ cut into the ground ’, and the reference to Xen. *Vect.* IV 27, in which κατατετμημένα is taken in this sense, and so meaning ‘ worked, opened up ’ as opposed to ἄτμητα, ‘ not worked or opened up ’. It could mean ‘ cut up ’ with a more technical sense, following the meaning of κατατέτμηται in Hdt. I 193.

[6] Crosby 1, *Hesperia* X 14 ff., ll. 53, 72; Crosby 16, *IG* II^2 1582. 70.

[7] Crosby 2. 18–19.

[8] Crosby 5. 75–6.

[9] *IG* II^2 1582. 70.

[10] It appears in Crosby 6. 5 and 14. Both passages are very defective, but it is very clear that the ἐπικατατομή is associated with, but distinct from, a *metallon* which (to judge from the letter spaces) is almost certainly *palaion anasaximon*, as it is in *IG* II^2 1582. 136 and 137 (reading of Crosby, *Hesperia* XIX (1950), 250), and (though defective) fairly certainly in Crosby 16, Face A, Col. II (*ibid.* p. 247), l. 50.

[11] LS^9 on the authority of *IG* II^2 1587. 15.

[12] *Or.* XXXVII 36.

[13] *Ibid.* 38.

[14] 47, 2.

[15] Kenyon observes (*op. cit., ad loc.*) ‘ *numerus* γ̄ *aut* ī *esse videtur, hic e re ipsa probabilior* ’. Some specific number is required rather than the [ἐς ἀεί] of van Herwerden and van Leeuwen.

[16] See LS^9; the general fourth-century meaning is potential, *cf.* ἐργάσιμα χωρία in Plato, Aristotle and Xenophon; the sense of ‘ active ’, ‘ in operation ’ is not so well supported, but is clear enough from the fourth-century inscription *IG* II^2 2498. 17: (τὰ τεμένη) ὅσα οἷόν τε καὶ θεμιτόν ἐστιν ἐργάσιμα ποεῖν. It is worth pointing out (with Sandys, *Aristotle’s Constitution of Athens* (1912), on Ἀθπ. 47, 2) that in Plato *Lg.* 824 it is opposed to ἀργός, and indeed in Crosby 5. 84 occurs the curious term ἠργηκός applied to a mine, apparently meaning ‘ idle ’; Crosby, *ad loc.*, aptly quotes Dem. XXVII 19: ἀλλ’ ἐνίοτε μέν φησιν ἀργῆσαι τὸ ἐργαστήριον.

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[17] It is interesting to note the use of this word in a metaphorical sense, which seems likely, though not necessarily, to have taken its origin from mining. LS^9 cites an isolated fifth-century example in Aristophanes *Vesp.* 876; *Eccl.* 584 (391 B.C.), Plato *Euth.* 3b, 5a, 16, *Lg.* 709a, 797b, c, Aristotle *Pol.* 1266a35, 1305b41, 1316b19, all καινοτομεῖν; Plato, *Lg.* 715d, 950a, καινοτομία; Aristotle *Pol.* 1265a12, καινοτόμος. The relatively frequent use by Plato and Aristotle, in certain of their works, of this metaphor might be due to mining activity in the period of composition.

[18] Kirchner in *IG* II^2 1582 (following Oikonomos) takes this view in a note to l. 60: '*atque v.* 60, 64, 77 *sub voce* ἐργάσιμα *intellegendas esse* καινοτομίας *inde apparet, quod in hac parte tabulae veterum metallorum mentio omnino non fit.* Cf. *ad n.* 1587. 13. *Quodsi Arist.* 'Αθπ. *XLVII 2 commemorat* τὰ πραθέντα μέταλλα, τά τ' ἐργάσιμα τὰ εἰς τρία ἔτη πεπραμένα καὶ τὰ συγκεχωσμένα (pap. συγκεχωρημένα) τὰ εἰς. ἔτη πεπραμένα, *consentaneum est* τὰ ἐργάσιμα *esse metalla nova,* τὰ συγκεχωσμένα *vetera*'. The basic assumption here is that there must somewhere be a record in this passage of *kainotomiai.*

[19] See below for the essential differences likely to be reflected in administration.

[20] See LS^9; the sense 'demolish', as used in the examples cited, seems unsuitable for mines, but 'fill up' as in Hdt. IV 120, 140, and Xen. *Hell.* III 1, 18 seems a better meaning.

[21] Dr. M. N. Tod makes the attractive suggestion to me that συγκεχωσμένα might mean 'blocked up' by the collapse of the galleries.

[22] This is Sandys' second suggestion (*op. cit.* 184), in discussing this problem, but attached to the emendation συγκεχωσμένα. Συγκεχωρημένα he would interpret as possibly mines 'let under a special agreement'. Professor J. Tate lends his support to the interpretation given in the text.

[23] Ten years need not be taken as certain. See below, pp. 226–7. On stylistic grounds, as Dr. M. N. Tod points out to me, ῑ (=δέκα) is preferable to γ̄, since if the latter were adopted the sentence would become extremely ugly with its repetition of τὰ εἰς τρία ἔτη πεπραμένα.

[24] *Vect.* IV 10–11.

The lease lists employ the terms *ergasimon* and *kainotomia*, but not συγκεχωρημένον. Instead there appears ἀνασάξιμον, sometimes παλαιὸν ἀνασάξιμον, a difficult term not used elsewhere in any context. It is clearly connected with the verb σάττειν and its compound ἀνασάττειν; *palaia anasaxima* are mines which have previously been worked, as is clear from the context in which the term appears in the lease inscriptions.[26] Though the meanings assigned to the verbs [27] suggest it, the explanation of *anasaxima* from the idea of the loading or filling of mine bags or baskets is feeble. The interpretation ' filled up ', ' piled up ', parallel to the συγκεχωσμένα of Busolt and Poland's conjecture in Ἀθπ. 47, 2, would do, if it were not quite clear that this practice could not be and was not followed, unless in the propping of the roof on piles of rock. It is just possible that the usage of σάττειν for ' man ', ' equip ', would justify the interpretation ' equipped ', which term would, however, have to be interpreted in the broadest sense. Leaving aside for the time being any question of the difference between *anasaximon* and *palaion anasaximon*, the almost certain equation of *anasaxima* with συγκεχωρημένα may be admitted, with the same idea implicit in *anasaxima* of discontinuance of operation which is present in συγκεχωρημένα. This is clear from the distinction made in the lease lists between *ergasima* and *anasaxima*.

As common as *metallon* is the term ἐργαστήριον. The root ἐργ- is closely connected with the mines not only in the term ἐργάσιμος, but also in the commonly employed ἐργάζεσθαι and ἔργα, where the reference is very often to the mines in the stricter sense of the word, as well as more generally to mining and related activities. *Ergasterion* is a word of very common use in the fourth century, with the clear meaning of an establishment where a craft or industry is carried on generally by slaves. In literary authorities and inscriptions alike, relating to the mines, it appears side by side with *metallon*, and it will be seen that there has been a tendency to confuse the two. In the lease lists a considerable number of *ergasteria* appear in what are obviously surface boundaries. The general circumstances in which they receive mention, especially their association with what are clearly natural features on the surface of the earth, exclude the possibility that they are mines in the proper sense. They seem to be distinct from the κατατομαί, which, as shown above, form parts of the actual mines. They are, rather, to be regarded as the establishments for the preparation of the ore by pounding and washing,[28] of which remains survive in the mining region. Only one example occurs of what seems to be a more specific term than *ergasterion*, the word κεγχρεών of Dem. XXXVII 26, apparently[29] an establishment connected with the preparation of silver ore (not iron, as LS^9 suggests), derived from κέγχρος (κέρχνος) ' millet ', and therefore naturally suggesting that the ore was here pounded to the size of millet grains. As Boeckh points out, the lexicographers, for what they are worth, think otherwise.[30] Without following Boeckh in his metallurgical excursion, it seems reasonable to suppose that κεγχρεών refers either to (i) a workshop where ore was reduced to the size of millet grains, or to (ii) a workshop where ore was smelted or impure silver purified.[31] To judge from the text of Dem. XXXVII, in which the issue was an *ergasterion* with thirty slaves,[32] the establishment in question contained not only an ore-grinding shop, if this is the sense of κεγχρεών, but also a department where impure silver was purified.[33] In the lease lists there are many *ergasteria*, sometimes several concentrated in a small area,[34] while furnaces or ovens appear but rarely,[35] as might be expected. The removal of useless matter from the ore, and its pounding and washing, were best conducted as near the mine head as possible, and was not as skilled a trade as smelting, which might profitably be conducted only at a limited number of centres.

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[25] As will be seen below, it is not quite clear how the prices paid were determined, but when once in a συγκεχωρημένον mine a lucky strike had been made, others would be willing to replace the lessee even at a higher rate of payment. Even if there were no outside competition, it would be a poor reward for the lessee's enterprise if at the end of only a short period (say three years) the concession was subject to renewal at a higher price determined by the State (see below for the question of renewals of leases from time to time as against the idea of a perpetual lease). This, of course, presupposes the imposition of a higher price in such renewals, a problem which remains to be discussed below with the question of the manner in which this higher price was determined. But if none of these things happened, the distinction in period of lease between ἐργάσιμα and συγκεχωρημένα is meaningless, as is the distinction between different types of mine.

[26] As Kirchner, in *IG* II^2 1582, in the note on l. 20, points out.

[27] See LS^9. σάττειν seems to possess the meanings (i) ' fill, pack, stuff '; (ii) ' equip, provide with a store '. For the sense ' equip ', *cf.* Hdt. VII 62, Theocritus XVII 94. Ἀνασάττειν in pf. part. pass. ἀνασεσαγμένος, Plb. XII 25h, 2 only. Ἀνασάξιμος appears only in connection with the mines. *IG* II^2 on 1582. 20 leaves the meaning and derivation uncertain: *derivatum est vocabulum a* σάττειν = *refercire. Antiquus enim modus egerendi erat saccaria. Schol. Aristoph.* Plut. 681. *Poll.* X 149. *Itaque ea vena, unde saccarii iterum atque iterum fragmina ad saccos farciendos utilia peterent, nomine* ἀνασάξιμον *notabatur. Sic rem explanavit Han*(*sen*) 13 *adversatus Boeckhio* CIG I p. 289, *qui* σάττειν *ad metalla derelicta scoria et egerie completa rettulerat,* ἀνασάττειν *ad materiam ex metallis egerendam, si cui de integro illa exercere placuerat. At egerere* = ἀποσάττειν, *non* ἀνασάττειν. Cf. *Ditt.*^{3} 1202. 2. *Voci* ἀνασάξιμον *ferme additur* παλαιόν: . . . . *E rerum nexu colligitur* ἀνασάξιμα *fuisse metalla vetusta, iam instituta, quae plerique continuare malebant quam intacta aperire.*

There are other problems connected with the term *ergasterion*. It has been argued[36] that *ergasterion* signifies a section of a mine (μερίς) or a whole mine, and therefore, when we hear of the buying and selling of *ergasteria* or their mortgage,[36a] this is taken to be evidence for the buying and selling of mines, and for their status as private property. Part of this issue may be left for the moment, to be discussed below in relation to the organisation of the mines, especially in the matter of their boundaries above and below ground. Their status as property is best considered at this point.

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[28] Though the ore-washing establishments may have needed more localised organisation in relation to the cisterns, unless water was sold from them and carried by donkey to the *ergasteria*.

[29] Discussed by Boeckh in *Abhandlungen der Berl. Akad. der Wissenschaft*, 1815, republished as 'Abhandlungen über die Laurischen Bergwerke ' in *Kleine Schriften* V, 1 ff. Here use is made of the translation appended to *Public Economy of Athens* II (London, 1828), the English version of *Staatshaushaltung der Athener*^{1} (Berlin, 1817). The later and fuller third edition, Berlin, 1886, adds nothing (cf. *ibid.* I 378, note *a*) except a few references to the lists of the *poletai*.

[30] The principal explanations of the lexicographers are here given (of which Boeckh says (*op. cit.* 446), ' The explanations of the grammarians are so indefinite and obscure that they appear to have had little knowledge of its import '). *Lex. Seg.* 271: Κεγχρεών· τόπος Ἀθήνησιν οὕτω καλούμενος ὅπου ἐκαθαίρετο ἡ ἀργυρῖτις κέγχρος καὶ ψάμμος ἡ ἀπὸ τῶν ἀργυρίων ἀναφερομένη. Pollux VII 99: Ταύτης δὲ (γῆς σιδηρίτιδος) τὸ κάθαρμα σκωρίαν ὠνόμαζον, ὥσπερ τοῦ χρυσοῦ τὸ ἄνθος ἀδάμαντα καὶ τὸν τῶν ἀργυρίων κονιορτὸν κέρχνον. Harpocration, *s.v.* κεγχρεών: τὸ καθαριστήριον, ὅπου τὴν ἐκ τῶν μετάλλων κέγχρον διέψυχον, ὡς ὑποσημαίνει Θεόφραστος ἐν τῷ περὶ μετάλλων.

[31] See Boeckh, *op. cit.* 449. Usually equipment for pounding the ore, and sorting tables, would be at the mine head (*RE* Suppl. Bd. IV 135–6), and mills and washing tables in separate *ergasteria*—a natural division of labour. There could, in fact, be three separate types of establishment: (i) the mine; (ii) the ore-preparing establishment; (iii) the smelting place. (ii) and (iii) were sometimes, at any rate, separate, as the distinction of *ergasterion* and κάμινος in the lease lists shows, as is also the case with (i) and (ii), shown by the distinction of *metallon* and *ergasterion*. How exactly, in terms of business relations, (ii) and (iii) were related to the mine operator is obscure.

[32] The issue is summarised by M. Finley, *Studies in Land and Credit* 32–7, and discussed *passim*. See also J. V. A. Fine, *Horoi*, *Hesperia* Supplement IX, Index 211. Finley *op. cit.* 259 n. 110 properly points out the common confusion of mine and *ergasterion*.

[33] Dem. XXXVII 28: Καὶ κατεργασάμενος τὴν ἀργυρῖτιν, ἣν οἱ ἐμοὶ οἰκέται ἠργάσαντο, καὶ ἔχων τὸ ἀργύριον τὸ ἐκ ταύτης τῆς ἀργυρίτιδος. . . . . . There seems to be no good reason for not accepting the ' documents ' quoted *ibid.*, 22, 25, 26, and 28. Pantainetos also engaged in mining, *cf. ibid.*, 22, but this *metallon* is not to be confused with the *ergasterion*.

[34] *Cf.* Crosby 5. 78–9 (two workshops). In *IG* II^2 1582. 155 ff. sufficient is preserved to show three of these establishments as boundaries to one mine. Orth, *RE* Suppl. Bd. IV 138–9, comments on the numbers of *ergasteria* (*i.e.* ore-washing establishments; note that the cisterns may have been separately owned, and water from them sold to the ore-washers) of which remains survive in close concentration. Many are surrounded by walls, and were therefore separate undertakings. It seems, then, that no large-scale organisation existed of this aspect of the mining industry.

[35] Crosby 1 (*Hesperia* X 14 ff.), l. 54; 5. 85; 13. 11, 57, both fairly certainly restored; 19. 25; 32b = *IG* II^2 1588. 6. Mortgage stone at Laurion, *IG* II^2 2750: ὅρος κ̣[α]|μίνου καὶ|ἐδαφῶν|πε[πραμέ|νων ἐπὶ λύ|σει]. (= Finley, *Land and Credit* 143, no. 92; cf. *AM* LXVII 36, no. 42). *RE* Suppl. Bd. IV 139. Traces of furnaces are rare, which is perhaps due to their destruction by the great heat of the smelting process.

[36] Boeckh, *op. cit.* 467; lately in *Hermathena* LXXVIII (1951), 50–66, by Sir John Miles.

[36a] Here used as a convenient general term, though the writer is in full agreement with Finley's condemnation (*Studies in Land and Credit in Ancient Athens* (New Brunswick, 1952), 9) of the use of this term in relation to the hypothecation practices of ancient Athens.

The status of the mines is a much debated problem. Were they in land which was private property and themselves privately owned, or held on perpetual lease from the State, with a preliminary payment and a yearly rent (the implication here being that the surface land, originally belonging to the State, went with the lease of the mine(s)) ? Or were they held on short-term lease from the State, either being in private property as far as the surface land is concerned (with the mining rights detached from the surface and vested in the State ('*Bergregal*')), or located in State domain land? As a final suggestion were there two categories, privately owned mines in land which was private property, and state-owned (but not state-operated) mines let out on lease for a period either in private property or in state domains?

The theory that the Attic mines, being located in land which was private property, were thus themselves privately owned, must be rejected. It rested on the argument that if mines were bought and sold and were given as security they must be absolute private property. There is no evidence in specific cases for the purchase or sale of *metalla* so termed, but the interpretation of *ergasteria* (which are bought, sold and given as security) as ' mines ' seems to provide evidence for such a view. In Isaeus III 22 the wording might seem to justify such an interpretation of *ergasterion.*[37] On the other hand, in Aeschines I 101 ἐργαστήρια δύο ἐν τοῖς ἀργυρείοις ἓν μὲν ἐν Αὐλῶνι, ἕτερον δ' ἐπὶ Θρασύλλῳ (Θρασύμῳ) are sold, apparently to avoid liability for public financial burdens (λειτουργίαι); but mines were not included in the assessment to determine liability to such burdens or in relation to ἀντίδοσις, as is clear from (Dem.) XLII 17–19.[38] The *ergasterion* of Dem. XXXVII 4, the object of a case turning on ὑποθήκη or πρᾶσις ἐπὶ λύσει, is more naturally to be taken as a surface establishment, separate from the mine or mines worked by its tenant.[39] In any case it is difficult to see how a mine, in its very nature a wasting asset, could stand as security.

This extreme view (*ergasterion* = *metallon* = private property in the fullest sense) is not accepted by Boeckh, who holds [40] that freedom from λειτουργίαι indicated that mines were not ' like other lands the freehold property of the citizens, but the absolute possession of the State '. He maintains that to lease mines for a term would lead to their wasteful exploitation, and to difficulty in enforcing the terms of the lease, and therefore argues that they were granted to private individuals for perpetual possession in fee, ' which might be transferred to a third person by inheritance or sale, and in short by every kind of legal conveyance: that is to say, the possession of the mine was a tenancy in fee-farm '. In his view a sum of money was paid ' once for all, as purchase or entrance money ',[41] and ' any person was allowed to dig for ore in those parts of the mountain which had not yet been alienated, and he was not compelled to purchase the soil until such time as he found productive ores, and was willing to work them '.[42] There was also a payment of one twenty-fourth part of the produce of the new mine.[43] Sir John Miles, a recent commentator on Demosthenes XXXVII,[44] takes much the same view (not, one fancies, uninfluenced by Boeckh): 'The State is to be regarded as the original owner of the mines, and the persons engaged in the mining industry bought from the State the mines which became their own property subject to a yearly rent of one twenty-fourth of the silver extracted. They may be regarded as holders of a perpetual lease, or as freeholders subject to a perpetual rent-charge.' In both writers, as noted above, this view rests in part on the interpretation of *ergasterion* in Demosthenes XXXVII and in Aeschines I 101, an interpretation which seems incorrect. Both writers also lay stress on the terminology used: πωλεῖν, ὠνεῖσθαι appear in connection with the mines, rather than μισθοῦν, μισθοῦσθαι.[45] Miles is also led by the references to καταβολαί [46] to consider 'Αθπ. 47, 3 on the public sale of property, and to conclude from it that there was some sort of sale of a perpetual lease. Weakest of suggested proofs of the 'sale' of mines is that based on Hypereides IV (III) 36: ἔγνωσαν ἴδιον εἶναι τὸ μέταλλον, where it is clear that ἴδιον does not mean 'own property', but 'their concern' as opposed to someone else's, since the *metallon* was alleged to have been extended ἐντὸς τῶν μέτρων.[47]

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[37] Ξενοκλῆς τοίνυν Βήσαζε μὲν ἰὼν εἰς τὸ ἐργαστήριον τὸ ἡμέτερον εἰς τὰ ἔργα. . . . In the lease inscription *IG* II² 1587. 7 we have τὸ ἐργαστήριον τὸ Δ[ιφίλειον καλούμενον (cf. *ibid.* 11), but this need not be a mine.

[38] Where, indeed, it almost looks as if all property in the mining region (τὰ ἐν τοῖς ἔργοις) were ἀτελῆ. See below, n. 376.

[39] The view that *ergasterion* cannot mean ' concession ' in the mines seems to be clinched by the evidence of mortgage-stones, though too much stress cannot be laid upon them because of their limited number. Whereas *metallon* appears in boundary-stones, *IG* II² 2636–8, the term does not appear on mortgage-stones, though we have mortgage-stones relating to *ergasteria*, slaves and a κάμινος in the mining area, *IG* II² 2747 (see n. 148), 2748, 2750, comparable to the mortgage-stones of *ergasteria* found elsewhere in Attica, *ibid.* 2746, 2749 (Finley, *Land and Credit in Ancient Athens* 143 nos. 91 and 90).

[40] *Op. cit.* 453.

[41] *Op. cit.* 454. On the question of preliminary payment, he says, ' this sum (*i.e.* the ninety minae of Pantainetos' "purchase" in Dem. XXXVII 22) cannot have been an annual rent, for as its amount depended upon the produce of the mine, it could not have been definitely stated beforehand '. But this would depend on the type of mine, for which question see below, pp. 235–6.

Unfortunately for the argument from terminology ὠνεῖσθαι and μισθοῦσθαι are both used in exactly the same sense by Aristotle, *cf.* 'Αθπ. 47, 4: μίσθωσις τῶν τεμενῶν (for ten years), yet 47, 2: τὰ πραθέντα μέταλλα . . . . εἰς τρία ἔτη πεπραμένα, and yet again in 47, 2: τὰ τέλη τὰ εἰς ἐνιαυτὸν πεπραμένα. Similarly, Andocides uses terms of selling and buying for the acquisition of tax-collecting contracts.[48]

The use, therefore, of terms signifying 'buy' and 'sell' settles nothing on this point. Miles, who relies on this distinction of terminology to deny that the mines were leased,[49] is, indeed, led astray by his misinterpretation of the term *ergasterion* and concludes: 'But the strongest proof that the mines were sold and not leased for three or ten years is to be found in the speech against Pantainetos, for there the mine which cost 90 minae was mortgaged by Pantainetos for 60 minae, and no one, and certainly not a moneylender, would have lent two-thirds of the value at only 12% on the security of a lease for three or ten years.' But in this speech the mine and the

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[42] In speaking here (455) of 'the purchase of the soil' Boeckh presupposes vacant land, and thus avoids the difficulty of publicly leased mines under private land.

[43] On this question of a proportional payment, see below, pp. 229–30, 238.

[44] In *Hermathena* LXXVIII (1951), 52.

[45] For terms of buying and selling *cf.* Aristophanes *Equ.* 362: ἀλλὰ σχελίδας ἐδηδοκὼς ὠνήσομαι μέταλλα. 'Αθπ. 47, 2. Dem. XIX 293 of Moirokles' extortion παρὰ τῶν τὰ μέταλλα ἐωνημένων. Dem. XXXVII 22. Deinarchos (Baiter and Sauppe II 325), πρὸς Μήκυθον (Blass, *Attische Beredsamkeit* III 2, 305: Μίκυθον) μεταλλικός· πριάμενοι μέταλλον. . . . Harpocration and 'Suidas' *s.v.* διαγραφή: ἡ διατύπωσις τῶν πιπρασκομένων μετάλλων δηλοῦσα, διὰ γραμμάτων ἀπὸ ποίας ἀρχῆς μέχρι πόσου πέρατος πιπράσκεται. Harpocration *s.v.* πωληταί, on the other hand, seems to make a finer and obviously baseless distinction, if the distinction of terms is insisted upon: διοικοῦσι δὲ τὰ πιπρασκόμενα ὑπὸ τῆς πόλεως πάντα, τέλη καὶ μέταλλα καὶ μισθώσεις καὶ τὰ δημευόμενα. Ps-Ulpian 685C (Wolf), quoted by Boeckh, for what it is worth, says of Meidias: Μεμίσθωτο γὰρ τὰ μέταλλα παρὰ τῆς πόλεως, ἃ ἦν τοῦ ἀργυρίου. On this question of terms, see below.

[46] Relative to the mine in Dem. XXXVII 22: τὸ ἀργύριον . . . . . . ὃ ἔφερεν καταβολὴν τῇ πόλει τοῦ μετάλλου ὃ ἐγὼ ἐπριάμην ἐνενήκοντα μνῶν. . . . .

[47] It has, indeed, been argued (with the interpretation of ἴδιον as 'own property') that ἐντὸς τῶν μέτρων means within the boundaries of a state mining area as opposed to a private one. On this and the offences of Philippos and Nausikles, *ibid.* 34: ὡς ἐξ ἀναπογράφων μετάλλων πεπλουτήκασι, and that of Epikrates of Pallene, *ibid.* 35–6, which was not greatly different, see below pp. 220–1.

[48] *de Myst.* 133: ἐπρίατο τριάκοντα ταλάντων. 134 ἐωνοῦντο πάλιν τριάκοντα ταλάντων. *Ibid.*, ἐπριάμην. Note in 134 the curious phrase ἀντεωνεῖτο οὐδείς. . . . . . Some new light is thrown on this practice of purchasing the right to collect a tax by the new portion of *IG* II² 1582, published in *Hesperia* V (1936), 393 ff., no. 10, ll. 115–90. This gives a list of δημιόπρατα, including property publicly sold which belonged to one who had acted as guarantor for the purchasers of the right to collect various taxes (date probably 342/1 B.C.). The sale took place when both purchaser and guarantor had defaulted. The taxes named are μετοίκιον (126), ἐν τοῖς ἔργοις ἡ πεντεδραχμία (129–30), ἡ πεντεδραχμία ἡ τῶι Θησε[ῖ] (134–5), the purchase price being payable in ten instalments (καταβολαί, *cf.* 'Αθπ. 47, 3) of what is called in l. 148 ἡ ὠνή. Payment for mines must have been administered in a similar fashion.

[49] *Op. cit.* 52.

ergasterion are quite distinct. He is also forced to explain away Ἀθπ. 47, 2 by a suggestion which is attractive but difficult to fit in with the categories of mines: ‘The phrase εἰς τρία (or δέκα) ἔτη πεπραμένα then must mean that the mine is bought within three or ten years by payment of three or ten annual instalments.’ This might be a reasonable suggestion for the συγκεχωρημένα, *viz.* the mines surrendered to the State (they need not be yearly instalments), but not for the ἐργάσιμα, where one would have expected a transaction between present and prospective owner. Such an idea of *purchase* does not fit in well with Pantainetos' statement that he had to pay double for defaulting, as was the case for purchasers of tax-collecting rights.

If the evidence seems to exclude the possibility of the mines being in all cases private property, or, alternatively, subject to perpetual lease, there is still the suggestion (see above, p. 205) that there were two categories of mines, the one state-owned, the other privately owned. It will be well to set out what apparent evidence there is first for privately owned mines and then for state-owned mines.

The evidence for privately owned mines is scanty. A good deal of it rests on that mistaken interpretation of *ergasterion* = *metallon* mentioned above.[50] With the recognition of *ergasterion* as meaning a ‘workshop’ this evidence disappears. The rest consists of: (i) the ἴδιον of Hypereides IV (III) 36; (ii) the (μέταλλον) δημευθέν of (Dem.) XLII 3; (iii) Dem. XL 52, where Mantitheos and his father Mantias borrow from the banker Blepaios two thousand drachmae εἰς ὠνήν τινα μετάλλων (the sum and the plural ‘mines’ are worth noting). After the death of Mantias the inheritance is shared by Mantitheos with two sons of Plangon and Mantias, Boiotos and Pamphilos. After Mantias' death, says Mantitheos: τὰ μὲν μέταλλα πρὸς τούτους ἐνειμάμην, τὸ δάνειον δ' αὐτὸς εἰσεπράχθην. . . . In each case the most straightforward explanation is one which does not accept the idea of privately owned mines. In (i) ἴδιον means ‘their concern’, *i.e.* the mine which was properly to be operated by the accused, outside which they had not gone;[51] in (ii) the confiscated mine (δημευθέν) is surely one sold (by the *poletai*) and then resumed or in danger of resumption because the holder(s) of the μερίδες could not meet his (or their) obligations. Why else should it be confiscated?[52] In (iii) the mine leases purchased by Mantias and Mantitheos are taken over in partnership by Mantitheos and two other heirs, but we learn nothing further from this passage about the status of the mines, the use of the term ὠνή being ambiguous, as seen above.

The theory of state-owned mines has at first sight more to be said for it. It is suggested, first, by the inscription *IG* II^2 411,[53] period of Lycurgus *c.* 330 B.C. This rather fragmentary inscription[54] seems to be a state decree making a concession to one Sokles, who (ll. 6–8) is to be [κ]ύ[ριον πάντων τῶν ἐδαφ|ῶ]ν ὅθεν φησὶ τὴμ π[ρόσοδον ἔσεσθαι τῶι] | δήμωι. It would seem, therefore, that some public domain is involved. The concession, in Wilhelm's restoration, is embodied in the immediately following passage (ll. 8–11): ἐπειδὰν δὲ ε[ἰ]ς [βάθος ὀρύξας φαν]|ερὰν καταστήσηι τὴ[ν ἀργυρῖτιν, εἶναι τ|ὴ]ν κάρπωσιν Σωκλεῖ κ[αὶ τῆι πόλει πέντ]|ε καὶ εἴκοσι ἔτη. The κάρπωσις is to be taken by the State and Sokles in alternate years, and Sokles is to render some sort of account each year (this seems to be Schönbauer's interpretation of ll. 16 ff.). Sokles is given special protection against dispossession, and the competent court is indicated in case of such trouble: τ[ὴν δὲ δίκην δικάζεσ|θα]ι ἐν ταῖς ἐμπο[ρικαῖς . . . . (ll. 33–4).

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[50] Pp. 204–06. Dem. XXXVII *passim*, Aeschines I 101, Isaeus III 22.

[51] See below pp. 220 ff. Meier-Schömann-Lipsius, *Das Attische Recht und Rechtsverfahren* 311, n. 8 regards ἴδιον of the Hypereides passage as indicating a ‘private mine’, not ἐντὸς τῶν μέτρων, which he takes to mean the bounds of a state mining area.

[52] It seems entirely against the evidence that it was offered as a security. It may be an illegal mine; see below, and Lipsius, *op. cit.*, 311, n. 8.

[53] *IG* II^2 411, Roberts-Gardner 46, Ziebarth, *Beiträge* 121. See Schulthess, *RE* XV 2105, *s.v.* ‘μίσθωσις’.

[54] Commentary by A. Wilhelm, *Attische Pachturkunden* III, *Archiv für Papyrusforschung* XI 206 ff. Wilhelm's restorations are approved by E. Schönbauer, ‘Vom Bodenrecht zum Bergrecht. Studien zur Geschichte des Bergbaurechtes’, *Zeit. Sav. Stift.*, R.A. LV (1935), 183 ff.

There was no reason why the Athenian people should not own land in the mining area (unfortunately the location of the concession is lost), and exploit it on what seem favourable conditions.[55] Unfortunately, though the inscription is stated to be *stoichedon*, there can be no certainty of restoration, especially as some of the most relevant lines vary in length (l. 8, 31 spaces; l. 9, 32), and the vital words (ll. 8–9) are restored: ἐπειδὰν δὲ ε[ἰ]ς [βάθος ὀρύξας φαν]|ερὰν καταστήσηι τὴ[ν ἀργυρῖτιν. . . . . . The word κάρπωσις reminds us of the use of the Latin *fructus* in relation to mining, and the references to δίκαι ἐμπορικαί (recalling the δίκαι μεταλλικαί, which were also ἔμμηνοι?), ἐργασία and ἐργάζεσθαι suggest mines, as may even the words (ll. 16–19): [εἶναι δ]|ὲ τὴν συλλογὴν Σωκ[λ]εῖ [καὶ τῆι πόλει πα]|νταχόθεν ὁπόθεν ἂ[ν] δεί[ξηι Σωκλῆς. On the other hand, some of the words and phrases, κάρπωσις, καρπός, καρποῦσθαι, συλλογή, κομίζεσθα[ι δὲ τοὺς καρποὺ|ς] (if this is the correct restoration), even ἐργασία and ἐργάζεσθαι, could also suggest some form of cultivation (*cf.* the συλλογή, πρᾶσις, τίμησις, πρᾶξις τῶν χρημάτων of ll. 21–3), perhaps of fruit trees, hence the twenty-five years of the concession. The identification of this decree as a mining concession is dubious, and even if it is such, it is no indication of a general application of the principle of mine ownership by the State.

The second body of 'evidence' for state mines concerns the name Λαύρεον (Λαύρειον). It has been pointed out[56] that there is no deme of this name, though there was a town so named—a town which did not for some reason give its name to a deme as other towns of the mining area did (Thorikos, Besa, Amphitrope, Sounion). It has therefore been suggested by Kahrstedt that the mining domain of Peisistratos was at Laurion,[57] and was confiscated by the State, and not incorporated in the deme system. Laurion represents a state domain with mining rights and surface land alike owned by the State. As evidence for this conclusion Kahrstedt adduces the ἐπὶ Λαυρέωι and ἐπὶ Θρασύμωι of the *poletai* records. Leaving aside for the time being the possible meaning of ἐπὶ Λαυρέωι, ἐπὶ Σουνίωι, as places of mine registration,[58] it may be agreed that there are cases where ἐπὶ Λαυρέωι is the location of a mine.[59] In the cases in the list Crosby 1 (ll. 42, 52, 61) the boundaries of the concessions, as far as they are given, seem to be private property. It is, indeed, to be noted that where ἐπὶ Λαυρέωι occurs, there is no reference to ἐν τοῖς . . . . . . in Crosby 1, or to ἐν τοῖς ἐδάφεσι in *IG* II² 1582 (the usual indication of a mine location), but boundaries in the form of land or buildings are given. It is difficult to conceive of a state domain ἐπὶ Λαυρέωι broken up into small parcels surrounded by private property. In any case references to Laurion as the location of mines (or for that matter as a registration centre) are relatively uncommon—far more common are references to roads (as boundaries) to or from Laurion.

Kahrstedt goes on to claim that the location denominated ἐπὶ Θρασύμωι was in something of the same position as Laurion:[60] ἐπὶ Θρασύμωι is to be explained as '*ein exemtes*

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[55] Sokles seems to have taken the initiative, and there is a suggestion of a long-term prospect of profit in the words (l. 7): ὅθεν φησὶν τὴμ π[ρόσοδον ἔσεσθαι τῶι]| δήμωι.

[56] *Staatsgebiet und Staatsangehörige* 25.

[57] *Staatsgebiet und Staatsangehörige* 26. The connection of Peisistratos with mining he takes for granted.

[58] As inferred by Kahrstedt and asserted by Young in *Hesperia* X (1941), 29. See below, pp. 217 ff.

[59] Crosby 1. 42, 52, 61; *IG* II² 1582 *passim*. In 1582. 63–4 the double occurrence might mean the place of registration in the case of the first ἐπὶ Λαυρέωι (but this double reference occurs elsewhere, *cf.* 1582. 135–7); other cases in 1582 must represent the location of the mine.

[60] *Op. cit.* 28–9. '. . . *dass wir hier eine echte Staatsdomäne haben, das alte Gut der Peisistratiden, das konfisziert ist und keinen anderen Oberflächeneigentümer haben kann als den Staat.*'

Gebiet ',[61] though it is impossible to show when or why it became such. Finally, as the third stage in this acquisition by the State of mining rights, it is suggested by Kahrstedt that the State (its appetite presumably whetted by the advantages accruing from Laurion and Θράσυμον) acquired the mining rights under other areas of land, without, however, taking possession of the surface soil.[62] In general, therefore, Kahrstedt conjectures a division between: (i) the areas where the State possesses the mining rights, though the surface soil is not always State owned, and (ii) the land where mining was free, but 1/24 of the gross product (*Bruttoertrag*) was payable to the State.[63] Apart from the historical obscurities, this seems to be a pointless division,[64] for the payment involved in (ii) seems to suggest some claim of the State to control the mining activity even in ' free ' land.

The general principle of a state domain suffers from no intrinsic objection, especially if we accept Wilhelm's and Schönbauer's reconstruction of *IG* II^2 411, but the evidence for its existence is not altogether satisfactory. There is some doubt about Laurion. Ἐπὶ Θρασύμωι [65] is a mine location very frequently used; it seems to have been a place to which and from which roads led.[66] There are very many cases of the phrase ἐπὶ Θρασύμωι completely preserved or certainly restored, of which a few show clearly that private surface property was involved.[67] Ἐπὶ Θρασύμωι cannot, in fact, represent any form of ' *exemtes Gebiet* '. Again Kahrstedt's suggestion of private mines in ' free ' areas rests in part on the supposed evidence for the sale of mines and their use as security (disposed of above pp. 205–07), and also, in part, on Kahrstedt's desire not to extend the supposed acquisition by the State of mining rights under private property to the whole of Attica, for this would be, in effect, a ' *Bergregal* ', which he is concerned to prove non-existent in Attica. In any case his two categories together, if the 1/24 payment on ' private ' mines be accepted (for which there is no evidence), amount to much the same as a ' *Bergregal* '.

It is to be concluded, on the present evidence, that there is no reason to admit the existence of privately owned mines in the full sense of the words ' private ' and ' owned '. It is, on the other hand, quite clear that the State exercised a measure of control over mining even in private land. However much the idea of it may be opposed to the theories of Greek and Roman jurisprudence, it must be admitted that something like a ' *Bergregal* ' did in fact exist. In addition, there may well have been mines in State land also.

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[61] *Op. cit.* 29: ' *Aber* ἐπὶ Θρασύμῳ *ist so häufig ohne Zusatz genannt, dass es neben den Demen gestanden haben muss, wie Laurion ein exemtes Gebiet, aber nicht Domäne im Sinne restlosen privatrechtlichen Eigentums an Oberfläche und Untergrund gleichmässig* '. For the suggested location of ' ἐπὶ Θρασύμῳ ', in the Maroneia (Kamareza) region, see Oikonomos, *AM* XXXV (1910), 299, on the authority of ' Suidas ' and Dem. XXXVII 4 and 25.

[62] *Op. cit.* 31: ' *Der Staat hat ausser dem Eigentum an der echten Domäne Laurion das Bergbaurecht auf einer grossen Zahl von Grundstücken rings um diese herum in den Demen Sunion, Anaphlystos, Amphitrope, Bessa, Thorikos. Auf diesen Grundstücken—nicht etwa: in diesen Demen—darf weder der Eigentümer der Oberfläche noch sonst ein Privater auf eigene Faust Bergbau betreiben* '.

[63] *Ibid.* 29–31: ' *Ich möchte mir die Entwicklung folgendermassen vorstellen: die Peisistratiden besassen ein Familiengut mit Bergwerksbetrieb, Laurion, in der Zeit ihrer politischen Macht haben sie auf benachbarten Landstrecken Bergbaurechte erworben, ohne die privaten Eigentümer von der Oberfläche zu verdrängen. Dies ist das Areal* ἐπὶ Θρασύμῳ, *eventuell zuzüglich des Hügels Bambides. In diesem Umfang hat die Republik das Eigentum der Tyrannenfamilie geerbt, also als einfacher Eigentümer für das eine, als Inhaber des Bergbaurechtes für das andere Areal, in diesem Umfang ist es bei der Einteilung des Staatsgebietes in Demen als eigene Einheit neben diesen konstituiert worden. Der Staat hat dann die Bergbaupolitik der Tyrannen fortgesetzt und schrittweise auf die benachbarten Demen übergreifend das Bergbaurecht unter bestimmten Grundstücken erworben, ohne die Eigentümer der Oberfläche zu verdrängen* ' . . . . . ' *Wo der Staat dies Recht nicht erworben hatte, war der Bergbau frei, aber steuerpflichtig mit 1/24 des Bruttoertrages.*'

[64] See below.

[65] Not a deme, see above, and *cf.* ἐν Αὐλῶνι, etc.

[66] Crosby 5. 10, 33 and 35; *cf.* 6. 11; 8 (*IG* II^2 1584). 4; 16 (*IG* II^2 1582). 6, 48–9, 68, 111, 117; Crosby 16, Face A, Col. II, *Hesperia* XIX (1950), 248, l. 75; 25. 19.

[67] Crosby 1. 77 (one boundary, but not unique, cf. *ibid.* 59–60, 61–2); 2. 9–10; 13. 55–6 (restored); *IG* II^2 1582. 15–16: ἐπὶ] Θρασύμωι ἐν τοῖς|[ἐδάφεσι τοῖς . . . .^{16}. . . . .]; 1582. 140–44 (restored), 159–62 (restored), 180–82 (restored) (Crosby, *op. cit.* 250); 1587. 5–6.

II. Administration

A. *The* Poletai *and the Lease Lists*

The agents of the State in regard to the mines were the *poletai.* The board composed of these officials seems to have been part of the Cleisthenic constitution.[68] They appear in a variety of inscriptions of the fifth century, as concerned in the carrying out of contracts.[69] They are represented by their own inscribed accounts first in *IG* I^2 325–34 and *SEG* X nos. 237–42, relating to the sale of property confiscated from the Hermocopidae (414/13 B.C.). All the fragments of their accounts, dating to the fifth century, seem to belong to this special category. There are other later fragments of similar public sale lists: *Hesperia* IV (1935), 565–83, no. 41, and V (1936), 390–3, no. 9 (the latter may be of the fifth century or of the fourth; Meritt dates it to 'first half of the fourth century'); *IG* II^2 1579 and 1580, dated *ibid.* in the beginning and before the middle of the fourth century respectively, are very fragmentary. 1581, the next in order in *IG* II^2, is far separated in date (end of the fourth century) from these. The heading of 1581, [τ]άδ' ἐπράθη ἐδά[φη], is analogous to that of Crosby 37 as restored by Crosby, *Hesperia* XIX (1950), 285: [τάδ' ἐπράθη μέτ]αλλα. 1581 may originally have had both headings, and there is no reason to make any basic distinction between 1579–81 and the group of *poletai* lists relating to mines, *IG* II^2 1582–9 and the whole body of new material collected by Crosby in *Hesperia* XIX (1950), 189–312,[70] of which some combine sales of property and leases of mines. 1579–81, or for that matter earlier *poletai* records, may have contained originally mine leases as well as property sales. On the other hand, Crosby 1 (see below p. 253) appears to indicate some fresh start or change in procedure as far as the mine leases are concerned.

The literary sources afford no assistance in solving this problem of the date when the *poletai* assumed the administration of the mines, if they did not hold it from the foundation of the office. 'Αθπ. 47, 2–3 sets out the administrative methods of the board including the leasing of mines,[71] but says nothing of when this duty was assumed.[72] The same is true of the lexicographers,[73] and the problem must be left for the moment.

The administration of the mines is the subject of reference in certain speeches of the orators, in the Πόροι (*Vect.*) probably to be attributed to Xenophon, in other literary authorities, and in the lexicographers. Where the information from these sources is not obscure or misunderstood or garbled by the transmitter, it is frequently of a partizan nature. It is for this reason that the *poletai* lists, the διαγραφαί,[74] are most welcome, and to them must be paid a degree of attention which might at first sight seem ill justified by their fragmentary character. As in the case of other such groups of inscriptions, it is important to set out clearly their limitations so that where conjecture takes the place of certainty its extent may be clearly understood.

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[68] See Busolt-Swoboda, *Gr. Staatskunde* (II) 1141. They are also mentioned 'Αθπ. 7, 3 in connection with the Solonian organisation. See Busolt, *Gr. Staatskunde* (I)^3 366.

[69] *IG* I^2 24. 9 (448 B.C.); 36. 7 (*c.* 447/6 B.C.); 44. 11 (*c.* 445 B.C.); 63. 25 (425/4 B.C.); 73. 22 (period of Pericles); 76. 51; 94. 5, 12 (418/17 B.C.); 115. 8 (409/8 B.C.); 128. 6 (before 428/7 B.C.?).

[70] Miss Crosby comments on and suggests restorations to inscriptions already published in *IG* II^2: 1583 (Crosby 7), 1584 (Crosby 8), 1585 (Crosby 10), 1586 (Crosby 38), 1587 and 1588 (Crosby 32), or published in part *ibid.*: *IG* II^2 1582 + *Hesperia* V (1936), 393 ff., no. 10 = Crosby 16; 1589 + Agora Inv. I 1723 = Crosby 34.

[71] Discussed below pp. 224 ff. See also *DA*, *s.v.* 'Polétai'; also *ibid. s.v.* 'Demioprata'.

[72] It is, however, worth pointing out here the reference ('Αθπ. 47, 2) to the λελευκωμένα γραμματεῖα, which seem to have been transmitted to the Council, with a statement of the purchaser and price of confiscated property and the taxes, as a record. Then there appears to have been another document in which there were listed separately: (i) on ten γραμματεῖα, those who have to make a payment each prytany (see Sandys, *ad loc.* for these), (ii) on three γραμματεῖα, those who have to make three payments in the year, (iii) those who have to pay once, on the ninth prytany. The γραμματεῖα are not expressly mentioned for this third group, nor are the mines mentioned in these arrangements. Noteworthy in 'Αθπ. 47, 3 is the diverse instalment purchase of houses and land: ἔστι] δὲ τῶν μὲν οἰκιῶν ἐν πέντε ἔτεσιν ἀνάγκη τὴν τιμὴν ἀποδοῦναι, τῶν δὲ χωρίων ἐν δέκα· καταβάλλουσι δὲ ταῦτα ἐπὶ τῆς ἐνάτης πρυτανείας.

[73] Harpocration *s.v.* 'πωληταί'. See above, note 45. Cf. *ibid.*, *s.vv.* 'διαγραφή' and 'ἀγράφου μετάλλου δίκη', Busolt-Swoboda, *Griechische Staatskunde* (II) 1141, 1222 n. 3, for the correct form ἀναπογράφου.

[74] For the term, *cf.* Harpocration and 'Suidas' *s.v.* 'διαγραφή' in note 45 above.

From the year of the earliest dateable list (Crosby 1, 367/6 B.C.) to the latest (Crosby 34, 307/6 B.C.), there is a period of sixty-one years. Seeming to cover this period, though we cannot be sure that all belong within it, is a series of thirty-three or thirty-four fragments of these lists. But of these only thirteen are substantial fragments, the rest are small or very small. One would like to believe that the fragments of large size, or groups of fragments, belong to large original inscriptions, and the small fragments to short inscriptions, but there is no evidence of this. With one exception all the lists are fragmentary,[75] and it appears very dubious whether anything more than a rough idea can be formed, in relation to a limited number, of their original extent. In the case of a considerable number the slab is so damaged that it cannot be ascertained whether it is opisthographic, or contained more than one column.[76] From the rest it is justifiable to attempt to draw some conclusions, but while a guess may be hazarded as to the number of columns in the slab, there is no indication of the height of the stone.[77] The only justifiable conclusion from the battered remnants is that some of the lists were pretty extensive: (* indicates certainly opisthographic): Crosby 4*, probably one column on each face, but with very long lines; 5, at least three columns; 7, at least two columns; 13*, at least four, more probably six or eight; 14*, at least four, probably more; 16*, eight columns; 17–21, at least two each; 24, three or four columns; 25, possibly three; 28, possibly a single column; 32, one column, unknown whether opisthographic; 37, the same. Nos. 28, 32, and 37 seem to have long lines, but the stelai are thinner than usual in 28 and 32 (both faces are not preserved in 37); perhaps, therefore, they were not so tall. Crosby [78] indicates the possibilities of calculating the numbers of leases in the case of no. 16: 'The stones as actually preserved give a minimum of 130 lines to a column on Face A, and of 110 on Face B. Allowing 5½ lines for the record of each lease, the four columns of Face A would have contained the records of about 96 leases, not including those on the missing pieces above and below, and the two and a fraction columns of B, assigned to the mines, perhaps of 45 leases.' A total of 141. It is to be noted that here the sales of confiscated property follow the mine leases and occupy a good deal less space, though considerable in itself. The sales of confiscated property appear in Crosby 1 (somewhat less than half), and pretty certainly in 7, 13, 14, 16 (as mentioned above), 17, 24, and 30(?). Whether they appeared in all the inscriptions of which fragments survive it is difficult to say. In No. 1 (the complete stele) there is a clear division between the two categories, and a new preamble to the list of mine leases. In No. 24 the heading apparently mentions both together in one preamble and starts with the mines; in No. 34 the *poletai* and date are mentioned, followed by μέταλλα τάδε ἀπέδοντο, with the description of the mines under prytanies; in No. 37 there is the heading in larger letters [τάδ' ἐπράθη μέτ]αλλα, which is restored as a parallel to the ταδ' ἐπράθη ἐδάφη of *IG* II² 1581. There is clearly a wide difference of practice here as in the rest of the organisation of the lists. Except in No. 1 and to a certain degree in

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[75] The form of the preamble is best represented by Crosby 1. 1: 'Επὶ Πολυζήλο ἄρχοντος πωληταί . . . . . .; l. 40: μέταλλα ἐπράθη. . . . . Crosby 34. 1–2: πωληταὶ οἱ ἐπὶ 'Αναξικρ[άτους ἄρχοντος *vvvv*]| μέταλλα τάδε ἀπέδοντο . . . . .

[76] So Crosby nos. 2, 3, 6, 8, 9, 10, 11, 12, 22, 23, 26, 27, 29, 30, 31, 33, 35, 36, 38, some being very small fragments.

[77] There seems to be little prospect of calculating the height from the thickness of the slab where this is preserved. Apart from the cases where the slab tapers downwards (*cf.* nos. 7 and 15, and also the odd shape of 18 (recent?)), the thickness appears to give no reliable indication of the height. The varying thickness of No. 1 seems to represent the range of the other slabs (except nos. 28 and 32, which are noticeably thinner), but this is no indication of similar height, since *e.g.* *IG* II² 1533, of thickness 0·10 m., has a height of 1·40 m., while Crosby 1, thickness 0·097–0·132 m. is only 0·922 m. high.

[78] *Op. cit.* 245.

No. 16, and possibly in 13 (part of one column), and in 14 (at least one column), there is no means of discovering to what extent the original inscription was composed of sales of confiscated property, but in the long lists they *seem* to bulk less than the mines.

The restoration of the very considerable gaps in the texts of the inscriptions is made difficult: (1) by the varying formula used in describing a leased mine and its boundaries, and the varying amount of information and order of words which appear especially in the description of boundaries; [79] (2) by the form of abbreviation of commonly recurring words, which varies from inscription to inscription; (3) while ten inscriptions are *stoichedon* with a known number of letters per line,[80] by far the greater number [81] are *stoichedon* but with an uncertain number of letters; four [82] are non-*stoichedon*. Restorations, therefore, in the majority of cases cannot attain certainty.

With these difficulties in mind two questions must be considered. (i) How representative are these fragments of the whole body of inscriptions (see above p. 211) of which we have lost the greater part? In what senses and with what limitations are they to be taken as a fair sample of the whole? (ii) If useful information can be got from them, to what degree can it be dated and the fragments arranged in chronological order to give a relative or approximate date, if not an exact one?

In attempting to answer the first of these questions some account should be taken, if only for the sake of completeness, of the ὅροι, the boundary or mortgage stones,[83] with which may be coupled the names of those who in the literary sources are in various ways associated with the mines. To what degree do the two categories overlap? Manifestly, if none of the names known from *horos* inscriptions and the literary sources were to be found in the list compiled by Crosby from the lease inscriptions, the conclusion would be inescapable that the lease inscriptions present little of the original picture.

A not inconsiderable number of names may be listed, twenty-eight in all, of those associated with the mines either on mine-markers or in inscriptions relating to mortgages, and in literature (mostly forensic speeches). Despite the very common mention in the later lease inscriptions of the stele seemingly set up at the mine (and doing duty both as boundary stone and public notice), very few of these survive,[84] probably about the same proportion as of the *horoi* of other sorts and from other areas.

In the *horos* inscriptions appears [Δ]ρωπίδης Ἀφιδ[ν]αῖος (*IG* II^2 2636), who also appears as a ' purchaser ' of a mine in Crosby 19. 22. The restoration here of D. as son of Ἕ[ρμιππ ?]ος suggests also the restoration [Δρωπίδης Ἑρμ]ίππο Ἀφιδναῖ(ος) in Crosby 5. 11 as 'purchaser' of a mine, one of the boundaries of which is a χωρίον of Diokles of Sounion (*ibid.* ll. 8–9, also named ll. 18 and 32), whose son - - - ίδης Διοκλέους Σουνι appears as the purchaser of a χωρίον in *IG* II^2 1596. 26–28. Pheidon of Aixone (*IG* II^2 2747) appears again in Crosby 26. 7 as a registrant. These are the only fairly clear cases, to which may be added the following vague or uncertain connections. The Thymochares of *AM* LXII (1937), 11–12, no. 12, does not indeed appear in the lease lists, but a person of that name may be related to the Kallias–Phaidros family [85] connected with the mines in these lists. In *IG* II^2 2653 [86] there is a mention of Εὐβοίο παῖδες; there is no Euboios in the surviving leases, though there is a Eubios. The mine name Φιλημονιακόν of *IG* II^2 2638 [86a] appears again in Crosby 16 $a + b$ = Face A, Col. II, 65–66, but the ‘ purchaser ’ is not otherwise known, and the same names were commonly given to different mines often close to each other.[87]

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[79] See below, pp. 217 ff.

[80] Crosby nos. 5, 9, 13, 14, 15, 16, 18, 19, 20, 26.

[81] Twenty-two; Crosby nos. 2, 3, 4, 6, 7, 8, 10, 11, 12, 17, 21, 22, 23, 24, 25, 27, 28, 29, 31, 34, 36, 38.

[82] Crosby nos. 32, 33, 35, 37.

[83] Also discussed below (pp. 25 ff.) in connection with the delimitation of boundaries. See in general M. I. Finley, *Land and Credit in Ancient Athens*, 1 ff.

[84] *IG* II^2 2634, 2635, 2636, 2637, 2638. If they are referred to in the phrase στήλην ἔχον, there was only one to each mine, and it is not clear how they served as boundary markers.

[85] See Kirchner *PA* 7891 and 13964, *Hesperia* XIX (1950), 235.

[86] Now see also M. I. Finley, *Land and Credit*, 155, no. 129.

As far as the literary references are concerned, certain names of those charged with the unlawful working of unregistered mines can reasonably be omitted from the list for purposes of comparison (*cf.* Diphilos,[88] though this name does appear in the mine lease lists,[89] and Nausikles and Philippos, whose names do not, in any case, appear in the lists [90]). Certain names belonging to an earlier period can also be excluded (Sosias the Thracian,[91] Nikias I,[92] though he is represented by his descendants, Hipponikos,[93] represented by Kallias of Alopeke,[94] and, apparently, Philemonides [95]). There are certain cases where a name known from another source might be restored in a mine-lease inscription: so, Mantias of Thorikos from Dem. XL 52 in Crosby 2. 11–12. Teisis of Agryle, of Hypereides IV (III) 34 (who may well be shown from the context to be connected with mining and not an ordinary informer [96]), may be represented by a Teisiakon mine *IG* II^2 1582. 59. In this connection might be mentioned also the Euthykrates of Hypereides IV (III) 34. Like Teisis he may well have been a mine operator (though we are not expressly told so, and he is not included in the list), and the name appears a number of times in the lease inscriptions.[97] In all, starting from a list of twenty-eight names known from the two sources discussed, and reducing these to nineteen by the omission of dubious cases,[98] there are only four certain names which appear both in the lease inscriptions and elsewhere. At a pinch three of the dubious cases might be added to make seven out of twenty-two, which is a relatively small overlap.

It will be convenient to set down here some points relative to the numbers of mines actually recorded in the mining inscriptions. The details are well analysed and set out in a table by Crosby,[99] which will serve to remind us of the difficulties of studying a group of inscriptions not only defective in series but also defective individually. Taking the larger inscriptions (which need not all have been the largest originally), there is a small group Crosby nos. 1, 4, 5, with seventeen, fourteen, and twenty leases respectively, then a gap, and again nos. 13–20, with *c.*

[86a] Roberts-Gardner 350, W. Peek, *AM* LXVII 35, no. 37.

[87] Crosby 20. 8–9. A mine Artemisiakon bounded by another of the same name but characterised as ὃ ἐ[ργάζεται. . . . For the appearance of the same names several times, see *Hesperia* X (1941), 25 n. 11.

[88] Plutarch, *Mor.* (*Vit. X Or.*) 843 D (Bernardakis), Crosby, *Hesperia* XIX (1950), 258.

[89] For Diphilos, *cf.* Crosby 13. 64 (restored as registrant), *IG.* II^2 1582. 125–6 (property owner). See *Hesperia* XIX (1950), 235; and *IG* II^2 1587. 11 for a Διφίλειον.

[90] Hypereides IV (III) 34 (O.C.T.).

[91] Sosias, Xenophon, *Vect.* IV 14. J. H. Thiel, Πόροι (Amsterdam, 1922), 20, and A. Wilhelm, ‘ Untersuchungen zu Xenophons Πόροι ’, *Wiener Studien* LII (1934), 19–20, identify him with the ἐπιστάτης of Nikias’ mines mentioned by Xenophon, *Mem.* II 5, 2. Wilhelm compares with Sosias ’Ατώτας μεταλλεύς, a Paphlagonian, whose gravestone (*IG* II^2 3260 *b*) was found in the Laurion region.

[92] Xenophon, *Vect.* IV 14, *Mem.* II 5, 2. Plutarch, *Nicias* 4, 2.

[93] Xenophon, *Vect.* IV 15. It is not absolutely clear whether this is Hipponikos II (*PA* 7658), as assumed by Kirchner, *ibid.* (see p. 245 below) or Hipponikos III (*PA* 7659).

[94] Crosby 1. 64, and *Hesperia* X (1941), 27, probably Kallias IV, father of Hipponikos IV, appearing in *Hesperia* V (1936), 400 line 110, now known to be of Alopeke, not of Ankyle as in *PA* 7660, 7842 (*cf.* Meritt, *Hesperia* V (1936), 410). See below p. 245.

[95] Xenophon, *Vect.* IV 15.

[96] A mine-operator in the vicinity?

[97] See Crosby, *Hesperia* XIX (1950), 260.

[98] The Μήκυθος of Deinarchos LXXVIII (Baiter and Sauppe II 325) might be included. The name in Deinarchos is wrongly read as Σμίκυθος by Crosby, *Hesperia* XIX (1950), 304, on the basis of PA 12798. Mekythos is, to be sure, probably an error for Smikythos, but in the absence of a demotic it is impossible to identify him with the Σμίκυθος [Π]α[ιαν]ιεύς of *IG* II^2 2748 (Finley, *Land and Credit* 143, no. 89) or with the Σμίκυθος Συπαλήττιος of PA 12798. Kirchner’s 12798 seems to refer to one who appears ‘ *in decreto in honor. Zenonis philosophi facto a.* 264/3, Laer. Diog. VII 12’, but the character in the speech of Deinarchos purchases a mine in 345/44 B.C and is involved in litigation in 341/40 B.C. (a period of considerable mining activity). See note 284*a* below.

[99] Crosby, *op. cit.* 286–92.

29, 7, 16, *c.* 62, 18, 9 and 11 respectively; the rest, which are very fragmentary, show only small numbers of leases; no. 24 with 6 and no. 32 with *c.* 12 are the largest. It should be observed that these include all the leases which we can distinguish even from small fragments. We are very far from being able to classify them all or to restore them in detail. In fact, of the total of 289 we can classify from information preserved on the stones or from certain restorations only 106.

One of the most disappointing aspects of these inscriptions is that there is no opportunity of tracing the fortunes of a mine over a period of time. In the fragmentary state of the inscriptions it is in the highest degree dangerous to attempt to show two mines as in fact the same. *Cf.* Pheidippos of Pithos in Crosby 13. 103: he is here registrant of a mine, so too in Crosby 15. 42–5; he is registrant of an Artemisiakon at Thorikos in Crosby 18. 70 and 72, and lessee of an Artemisiakon in Crosby 20. 25 and 26; his son Diphilos was also a property owner in the mining district, and in his land also there appears an Artemisiakon. Yet as far as can be judged all these mines are quite distinct. There are six cases pointed out by Crosby in which one mine might be identical with another. Three are very doubtful (Crosby 9. 3–9 and 32. 17 and 19; Crosby 14. 15–21 and 15. 23–29; Crosby 10. 5–6 and 18. 20); one is possible but no more (Crosby 6. 10 and 19. 4–9), two are very probable (Crosby 5. 53–55 and 14. 5–7; 9. 16 and 20. 48–52), but unfortunately they shed no light on the vexed questions of length of tenure of mine leases and sums paid for them.[100]

There is, finally, an interesting comparison of the complete inscription Crosby 1 with the later fragments. In Crosby 1 a fair number of people are mentioned, either as lessees (seventeen mines, seventeen lessees), or as owners either of land in the mining area or of other property, in which the mines are located or by which the boundaries of the mines are determined (thirty-one in all: it is to be noted that the boundaries are not given as consistently or as fully as later). Four of the mine lessees appear twice, so that the number of lessees is really thirteen. Some of the property owners appear three times and others twice,[101] so that only twenty-two or even only twenty distinct persons are named as property owners. Only one man, Pheidippos of Pithos, here appearing as lessee, appears again; [102] there are some other less close connections.[103] Out of the twenty or twenty-two owners of property only three [104] are certainly mentioned in later mine boundaries, and seven conjecturally.[105] Eight are not mentioned again.[106] Only one owner of property here mentioned certainly appears later as a mine lessee, that is Epikrates of Pallene.[107]

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[100] See below, pp. 231 ff.

[101] Nikias and Charmylos (or wife) appear three times; Exopios, Leukios, Diokles, Alypetos (or wife) appear twice, Diopeithes twice or thrice, and Kallias of Lamptrai possibly twice.

[102] Pheidippos himself as lessee of mines, and in the listing of mine boundaries, while certain members of his family appear (restored) as mine lessees.

[103] There is one uncertain case of the recurrence of a name (Telesarchos). In four cases relatives are certainly known as lessees of mines (one restored), and there are two probable cases of relatives as lessees (one restored). Two are elsewhere conjecturally concerned in mine boundaries (Philinos and Kallias of Lamptrai).

[104] Charmylos (45, 68, 79) also 5. 4–5; Pheidippos of Pithos (46–7, 81) also 15. 44–5, 18. 70 and 72, 20. 25–8, *IG* II^{2} 1582. 43 (see Crosby, *op. cit.* 249), 19. 4–9; Diophanes of Sounion (59–60) also 13. 68.

[105] Epikrates of Pallene (70–1), also 20. 5–11; Exopios (43–4, 62) also 28. 10–11; Kallias of Lamptrai (62, 73, 74) also 5. 70; Leukios of Sounion (46, 80) also 5. 5–6; Nikias of Kydantidae (41–2, 58, 64–5) also 8. 5; Philinos of Sounion (60) also 14. 2 and *IG* II^{2} 1582. 47, 50; Teleson of Sounion (69, 70), also 20. 11.

[106] Of these (and there is one doubtful, Timesios) the sons of two (Diokles of Pithos, 48–9, 58, and Diopeithes of Euonymon, 53–4, 78) are restored with more or less certainty as (i) registrant and (ii) purchaser of a mine: Diochares, Crosby 14. 15–21, 15. 23–9; Diotimos, Crosby 26. 1 and 6. Likewise Phaidros, son of Kallias of Sphettos, is restored, *Hesperia* XIX (1950), 251, *IG* II^{2} 1582. 180–1, as registrant of a mine; it is very uncertain whether the same son appears Crosby 13. 94. Kephisodotos of Aithalidai also appears to be the father of a lessee in Crosby 15. 23.

[107] Crosby 1. 70–1 and Hypereides IV (III) 35. There is, however, some difficulty about the chronology, see below n. 113. Leukios of Sounion (46, 80) is also restored as a lessee in Crosby 16, Face A Col. II, 70 (*IG* II^{2} 1582. 22), and in 20. 5–6.

Some comment should be made on the question of dating these inscriptions (see (ii) above p. 212). The letter forms seem to be of relatively small value for close dating in this fairly short period of the fourth century B.C. A limited amount, only, of evidence is given by the use of the variant forms of termination ο and ου. Only two of the inscriptions retain the rubric with the reference to the archon of the year: Crosby 1, which is complete, and 34, where the archon of 307/6 B.C. (Anaxikrates) is certain. This latter example is particularly disappointing, since an archon's name properly preserved here in the body of the text, in reference to the renewal of *ergasima*, would give a clue to the answer of the vexed question on the length of lease of at least this category of mine.[108] Other of the lease inscriptions contain sure references to archon dates, either preserved on the stone or in certain restorations. Thus in Crosby 13. 3 and 6, if we take both places together, there can be no doubt that the archon's name is Thoudemos (353/2); the same is true of Aristodemos (352/1) in ll. 130–1. In Crosby 16 the Kallimachos (349/8) of *IG* II^2 1582. 62 and 72, and the Theophilos (348/7) of *ibid.* l. 76 are certain. Less satisfactory is Crosby 18. Here Archias (346/5) may reasonably be restored in l. 20;[109] in ll. 61 and 66 the restoration of Theophilos (348/7) is too dubious to be of any value. In Crosby 19. 5 and 14 Sosigenes (342/1) is certain; in l. 10 the restoration of Archias is eminently reasonable.[110] In Crosby 20. 7–8 the name Εὐβο]ύλου (345/4) could, in view of the uncertain reading υ̣, be Θεοφ]ίλου (348/7). In Crosby 34, as noticed above, there is the undoubted restoration of Anaxikrates (307/6) in the preamble, but the restoration of Nikodemos (314/3) in ll. 13–14 is quite uncertain.[111]

Thus there is some value in the dates given as termini *post quem* (see below for the question how much *post*): of 352/1 in the case of Crosby 13, 348/7 in Crosby 16,[112] almost certainly 346/5 in Crosby 18, 342/1 in Crosby 19, and either 348/7 or 345/4 in Crosby 20. It should be pointed out here that the sequence of inscriptions as arranged by Miss Crosby, based on the archon dates, style of lettering, and obvious features of development in form, also fits in with the chronology of individuals, where information is available from other sources as a check, and of families, where, in a few cases, a family succession can be detected in connection with the mines.[113]

It seems clear enough, therefore, from the above considerations, that we can use these records only with the greatest caution. They *can*, however, be used. They certainly cannot be used for purposes of detailed comparison, that is, we cannot count the number of leases in one inscription and compare it with others earlier or later *in detail*. *But* a certain general trend can be recognised, if the larger and fairly securely dated examples are set in order:

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[108] See below, pp. 237 ff.

[109] Accepting the abbreviation ἄρχο (anything else is not likely).

[110] This archon-name might be used as evidence if no other archon can be fitted in, which seems to be the case, if the full-length demotic is accepted in ll. 9–10 (note the abbreviated form in l. 13). The abbreviated form of demotic (ll. 9–10: Φιλα) would give far more spaces, an archon-name of ten letters (vowel initial) or nine (consonant initial). There are no suitable examples of the former, but Pythodotos (343/2 B.C.) or Nikomachos (341/0 B.C.) suit the latter. Crosby's restoration depends on her theory of a long-term lease here, with ἀπεγράψατο as the verb.

[111] See Crosby, *Hesperia* XIX (1950), 283; the length of line is uncertain, and Demogenes (317/16 B.C.) restored in ll. 13–14, as Crosby points out, would make a renewal period of ten years.

[112] The archon name Theophilos (348/7 B.C.) appears to apply to one lease alone. See below for the question of the use of εἰσήνεγκε. The actual date of the inscription is probably 342/1 B.C. See n. 291 below.

[113] There are only two cases where comment seems necessary. The Epikrates of Pallene in Crosby 1. 70–71 (of 367/6 B.C.) could just be the Epikrates of Hypereides IV (III) 35–6 (date 330–24 B.C.), but the identification with Epikrates son of Menestratos (*PA* 4909), amphiktyon at Delos in 377 B.C., trierarch *c.* 342 B.C. is very dubious. The Epikrates of Crosby 20. 5 and 11 could be identified with either E. of Crosby 1 or E. of Hypereides IV (III) according to the date assigned to Crosby 20, but not with both. The other possibility is that of the grandfather appearing in Crosby 1 and the grandson in Hypereides. *Cf.* Demostratos I, Aspetos, and Demostratos II: Demostratos I, Crosby 1. 54; Aspetos, *IG* II^2 1582. 55 and Crosby 15. 21; Demostratos II, *PA* 3623.

The only other case is that of Lysitheides of Kikynna (Crosby 6. 10, *Hesperia* XIX (1950), 220), a relatively well-known figure, mediator in 369/8 B.C., trierarch in 355/4 B.C. (*PA* 9395). His son Lysikrates is on record (*PA* 9461) as choregos in 335/4 B.C. and as trierarch in 325/4 B.C. The name of Lysitheides appears preserved or restored in Crosby nos. 5, 6, 14, 19, 20. Crosby 29, in which his children appear as owners of ἐδάφη, is dated too late at 'post-mid 30's' unless the children here exclude Lysikrates.

Crosby 1	367/6 B.C.	Complete	17 leases
Crosby 5	Near mid-fourth century?	3 + cols.	20 + leases
Crosby 13	Between 350/49 and 345/4?[113a]	4–8 cols.	29 + leases
Crosby 16	342/1 B.C.?	8 cols.	62 + leases[114]
Crosby 18	341/0 B.C.?	At least 2 cols.	18 + leases
Crosby 19	339/8 B.C.?	At least 2 cols.	9 + leases
Crosby 20	338/7 B.C.?	At least 2 cols.	11 + leases
Crosby 32	320/19 B.C.?	1 col. Uncertain opisthographic.	12 + leases
Crosby 34	307/6 B.C.	1 col.? Unlikely to be opisthogr.	2 + leases
Crosby 37	End fourth/beginning third century	1 col. Uncertain opisthographic.	1 + leases

There is a clearly established increase from 367/6 to 342/1 (?) B.C., and clearly a decrease thereafter to the end of the century, though the peak may have been before 342/1 (?) (it is unlikely to have been after), and we have no clue to the intermediate ups and downs. This is in itself valuable evidence for the course of silver mining in Attica in part of the fourth century B.C.

While comparisons, especially in detailed figures (except as shown above), would be valueless, there seems to be no objection to taking the volume of the inscriptions and extracting from it some figures of general application without distinction of date. Thus the *relative* numbers of different categories of mines, the *relative* numbers of landowners, mine lessees, *ergasterion* owners, and the *relative* numbers of demesmen from demes in and outside the mining area, are unlikely to be falsely presented in this sample, though we should not be justified in drawing a conclusion on these questions in relation to one period compared with another. It could be argued that the arrangement of the lists in categories[115] might be a factor in producing an unrepresentative sample, if several long lists of, say, *kainotomiai* were lost and the relative numbers were thus upset, but the lease lists do not seem to show any such arrangement followed in a consistent manner.

Second, there are certain classes of information which do not involve comparisons; in these the evidence of the lease lists may be used. Such are: (i) the forms of lease record; (ii) the manner of delimiting boundaries; (iii) technical terms. There is also useful information to be got on prices paid for mine leases (though to be used with caution, since a general theory of the way in which they were determined is difficult to arrive at), and on the social standing of persons engaged in mining, who also appear in some capacity in other forms of record.

[113a] Reference to p. 237 will show how these dates are obtained.

[114] In the long list of confiscation sales appearing in the new fragment of *IG* II^2 1582 (*Hesperia* V 393 ff., no. 10, see above, note 48), one of the persons mentioned had defaulted in connection with ‘ἐν τοῖς ἔργοις τὴν πεντεδραχμίαν’ (lines 129–30). He is three instalments in default at 125 drs. per instalment (prytany instalments), that is, the total yearly payment is 1250 drs. If he was the sole collector of this tax, and it was paid on each mine irrespective of size or class, this would give 250 mines active in 343/2 B.C. It is, however, very uncertain what the nature of this πεντεδραχμία is, and how it was calculated. It seems a very small sum, hardly worth collecting, if it represents 5 drs. per mine. Note that, unlike some of the other levies mentioned, it was not shared by more than one collector.

[115] For organisation by localities, see n. 321.

B. *Location and Boundaries*

The records of the *poletai* seem to give abundant instances of the means adopted to delimit mining concessions. ‘Seem’ is a necessary qualification, for considerable variations are possible in the interpretation of the evidence. Crosby 1 [116] shows an undeveloped procedure different from the stereotyped practice of later inscriptions; no formal system for the recording of details seems to be present in the registration of mines and boundaries. A mine may be located generally in a particular area, or it may be given more precise boundaries. An obscurity here exists in the meaning of ἐπὶ and the dative case in such locations. In l. 41, ἐπὶ Σκοπιᾶι, it seems to mean ‘near’ or ‘in the vicinity of’. But contrast 63 ἐπὶ Σουνί⟨ω⟩ι ἐν Νάπει, 77 ἐπὶ Σουνίωι ἐπὶ Θρασύμωι, 79 ἐπὶ Σουνίωι ἐν Νάπηι, and 82–83 ἐπὶ Σουνίωι . . . Βήσησι.[117] In this last case (82–3), leaving aside the suggestion of an error by the stone-cutter, the mine is apparently described as being both at Sounion and at Besa. The suggestion made by Young,[118] that ἐπὶ Σουνίωι refers to the place of registry and Βήσησι to the location of the mine, is the only one that fits the text. It must be noted, indeed, that this is the only case in the mine lists where two deme names are used in this fashion.[119] In the other examples of two place names referring to the location of a mine, such as ἐπὶ Σουνίωι ἐν Νάπει,[120] ἐπὶ Σουνίωι ἐπὶ Θρασύμωι,[121] or Θορικοῖ ἐμ Φιλομηλιδῶν,[122] there is the possible interpretation that the non-deme names, Nape, ἐπὶ Θρασύμωι, and ἐμ Φιλομηλιδῶν are specific places located in the deme mentioned. But ἐπὶ Θρασύμωι [123] raises a difficulty. In Dem. XXXVII the same property is described as at Maroneia (4) and again as ἐπὶ Θρασύλλῳ (25), for which ἐπὶ Θρασύμῳ should almost certainly be read.[124] Therefore, if we are not misinformed on the position of Maroneia, it looks as if the adjacent or identical location of these places [125] excludes the possibility of ἐπὶ Θρασύμωι being in the Sounion deme. It might therefore be that ἐπὶ Σουνίωι represents a wide registration area, as the association of Besa and Sounion might also be taken to indicate.[126]

In the limited number of mines of Crosby 1 there is a certain slipshodness about the naming of boundaries or omission of them (*cf.* l. 50), which would seem to indicate no great number of mines in operation or, indeed, staked out, though it must be admitted that brief or no reference to mine boundaries are not unknown later.[127] The later general practice varies: cases of one boundary only seem to appear in Crosby 1 alone,[128] two boundaries are very common,[129] three boundaries are frequent,[130] in one case[131] sufficient of the text seems to be preserved to show three *ergasteria* as boundaries,[132] and there are also cases of four boundaries.[133] A curious example, which illustrates the diversity of boundaries which may be used, is Crosby 20. 8–13, where a mine (Artemisiakon) is bounded by another mine of the same name, a watercourse and an *ergasterion*, which with land and a house belonged to one Teleson, and another *ergasterion*, owner unnamed, who may therefore be the same Teleson. There are other examples of mines as boundaries (which immediately suggests the question, in what way did they act as boundaries? Through the surface *horoi* or approach works, or through the underground workings?), but they are never very common,[134] which might be taken to indicate that mines were not in very many instances crowded together, or alternatively that this was found to be an unsuitable form of boundary.

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[116] As seen above, the only complete example of a διαγραφή, and the earliest as far as the present evidence goes.

[117] On this point see Crosby and Young in *Hesperia* X 25.

[118] *Hesperia* X (1941), 29.

[119] See above pp. 208–09, for a discussion of the significance of Laurion and ἐπὶ Θρασύμωι.

[120] Crosby 1. 63. [121] Crosby 1. 77. [122] *IG* II^2 1582. 71.

[123] Crosby 1. 77, *IG* II^2 1582. 15, 19, 24; 1587. 5. See above pp. 208–09.

[124] In the ἔγκλημα, unless it is assumed that this document is late and spurious, with Θρασύλλῳ (which is unknown in the διαγραφαί) borrowed from Aeschines I 101, though this might equally well be a corruption of Θρασύμῳ.

[125] Cf. *AM* XXXV (1910), 298–300. Maroneia (the region or site of the mining activity of 484 B.C. (’Αθπολ. 22, 7) and of Pantainetos’ *ergasterion* (Dem. XXXVII 4)) also appears in the lease inscriptions, *cf.* Crosby 19. 18, the location of a mine called τὸ ἄντρον (recalling the ‘énormes vides’, mentioned by Ardaillon, *Les Mines* 139, as existing at Kamareza); also in Crosby 1. 59, 2. 17, 19. 23–4. It is interesting to note that Nikeratos of Kydantidai (*PA* 10742), great-grandson of the general, seems to have owned property in this region, as his father Nikias did at Nape (Crosby 1). See n. 142.

[126] For the meaning of ‘Sounion’ (and for a limited use of ἐπὶ Σουνίωι) cf. *Hesperia* X 165–6. In any case ἐπὶ need not have only this meaning, *cf.* ἐπὶ Θρασύμωι meaning ἐν or ‘in the region of’, and ἐπὶ Σκοπιᾶι (Crosby 1. 77 and 41 respectively). There are other forms: Θορικοῖ (Crosby 1. 65), Βήσησιν (*ibid.*, 73 and 82–3, and ἐν Νάπηι (or -ει) (*ibid.*, 41, 47, 57, 63, 67, 79). In the case of ἐπὶ Λαυρείωι (note the apparent definition in Crosby 1. 44 as the ‘ὅρος’) the meaning is not clear. It may be intended to indicate the location. For Sounion as a very wide area, from Thorikos to Anaphlystos, *cf.* Hdt. IV 99, ‘the high land of Sounion’.

[127] *Cf.* Crosby 18. 7–8, though the unknown length of the lines makes judgement difficult here.

[128] Lines 59, 62, 78.

[129] Crosby 1. 64–5; *cf.* 66 for north and south boundaries owned by the same man, and *IG* II^2 1582. 56.

The land in which the mine was actually located is not always mentioned, but is common enough. In Crosby 1 it is rendered by ἐν τοῖς and the name of the owner, or by ἐν τοῖς χωρίοις followed by a name. The term ἔδαφος (ἐν τοῖς ἐδάφεσι) comes into use in Crosby 4. Some kind of distinction, which is not clear, seems to exist[135] between ἔδαφος and χωρίον. Ἔδαφος[136] in these inscriptions seems to be used to mean both ‘ underground ’ (ἐν τοῖς ἐδάφεσι) and ‘ ground ’, when used in the form ἐδάφη, *i.e.* lands or property,[137] in location of mines and delimitation of boundaries. The description of the land *under which* does not exclude the naming of boundaries.[138] The property may be named in several ways, the nominative case of the owner's name, the words ἔδαφος(-η), χωρίον, οἰκία (with the owner's name), *metallon* (generally named, without mention of its owner), *ergasterion* (with owner's name), road, shrine, or natural feature (watercourse, hill, etc.). The number of *ergasteria* so used is very striking, and it is interesting to observe that there are a number of cases where two boundaries are marked by *ergasteria*,[139] or even three (see above).

Such boundaries on the surface seem to have been marked by *horoi*, though it is not certain that this was the universal practice. These and mortgage *horoi* are another class of epigraphical document which serves to throw some light on the mines. Something may here be said on these two types of *horoi* taken together for convenience. The boundary stones are not numerous, though many examples occur in the lease lists, for where the phrase στήλην ἔχον occurs[140] the reference must be to such stones as are listed below (*IG* II^2 2634, 2636) giving the name of the mine and the name of its first(?) lessee. It is to be hoped that more will be found mentioning named mines, with their location given (which is unfortunately less likely), to provide a basis for their identification on a map of the Laurion area.[141] *Cf.* the following mine *horoi*: *IG* II^2 2634: Τιμοκράτης | Κυδα | Ἀρτεμισια | κόν (found at Kamareza,[142] now in Laurion), 2635:

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[130] Cf. *IG* II^2 1582. 52.

[131] *Ibid.*, 155 ff.

[132] On *ergasteria*, see below, pp. 241 ff.

[133] *Cf.* *IG* II^2 1582. 63, Crosby 5. 17–19 (restored); there seem to be plenty of defective examples.

[134] Crosby 4. 2–4, 5. 75, 6. 1, 7. 19, 21 (*IG* II^2 1583), 8. 12 and 14 (*IG* II^2 1584); 10. 4 and 10–11 (*IG* II^2 1585); 20. 24.

[135] *Cf.* Crosby 9. 7–8.

[136] See LS^9 for the broad scope of its meanings.

[137] Isaeus XI 42 shows that it can mean houses also, *cf.* French ‘ fonds ’.

[138] *Cf.* Crosby 1. 48, 57–8, 79–81; 67 ff. is a curious example: ἐν τοῖς χωρίοις τῆς Χαρμύλο{σ}υ γυναικός, ὧι γεί: τὸ χωρίον τῆς γυναικὸς τῆς Ἀλυπήτο, βορρᾶ Τελέσων Σο⟨υ⟩νι: πρὸς ἡλίο ἀνιόν: χωρίον Τελέσωνος Σουνι, δυομένο Ἐπικράτης Παλλη:. Note *IG* II^2 1582. 45–51, where no ‘ *edaphos* ’ is mentioned, but boundaries are given on every side; *cf.* Crosby 1. 41–2.

[139] *Cf.* 7. 25–7 (*IG* II^2 1583) (restored), Crosby 8. 5–6 (*IG* II^2 1584), two *ergasteria* boundaries. Cf. *IG* II^2 1582. 95 ff., 130 ff., 148–9; Crosby 14. 12–14, 20–1, 26–7. For closeness of *ergasteria*, as far as their remains are concerned, see *RE* Suppl. Bd. IV 138–9.

[140] *Cf.* Crosby 4. 26; 5. 16, 48, 73; 6. 9. There are many other examples.

[141] On the persons whose names appear in these inscriptions, see above, pp. 212–13. See also n. 84.

[142] Kamareza is suggested by Ardaillon, *Les Mines* 138–40, as the probable site of Maroneia (see above n. 125) in the deme Besa, the site of mining activity in 484 B.C. For the North Greek association, *cf.* also Pangaion appearing Crosby 18. 6–7 in the Besa deme, apparently also a rich mining area. In Crosby 2. 17–18 it is possible that both are connected. See also n. 61.

Προσ | παλ | τιακ | όν̣ [143] (at Kamareza in private possession), 2636: [Δ]ρωπίδης κατέλαβε | *vac.* | [ἀ]νασάξιμον | μέταλλον | ᾿Αφιδ(ν)αῖος (found in the Sounion region? [144]), 2637: Διογένης - κατέλαβε - μέταλλον - - (on a rock at Kampodokhano, to the north of Kypriano; worthy of notice only for its position), 2638: Φιλημ|ονιακ|ὸν μέ|ταλλον | ὠνητὴς | Πολ(ύ)μηλ | ος Λαμπτρε|ύς (Laurion region [145]), *AM* LXII (1937), 11, no. 10: hόρος τõ ἐργαστηρί|ο (Laurion. Letters roughly incised), *ibid.* 11–12, no. 12: ᾿Αρτεμισ[ι]|ακὸν | Θυμοχ[ά]|ρης κα[ὶ] | Τέλα[ς] | καινο|τομε[ί]αν (Laurion), *ibid.* 12, no. 13: Θεοί· Πυθόδο|τος και|νοτομί|αν κατ|[έλαβε] (Laurion. Incised as no. 10). *AM* LXII (1937), 11, no. 10 is dated *ibid.* slightly before 400 B.C., the rest belong to the fourth or early third century.[146] There are also several mortgage inscriptions recording πρᾶσις ἐπὶ λύσει. It is not without significance for the legal position of the mines [147] that these mortgages are, in the limited number surviving, on *ergasteria* and slaves, cf. *IG* II^2 2747 [148]: Θεοί· | ὅρος ἐργασ|τηρίου καὶ ἀν|δραπόδων πε|πραμένων ἐπὶ | λύσει Φείδων|ι Αἰξωνεῖ ⁝ Τ (found near Thorikos '*in reliquiis metalli antiqui*'), 2748 [148]: text as 2747, but omitting Θεοί and substituting the name Σ|μικύθωι [Π]α|[ιαν]ιεῖ? (found at Sintérini), 2750: ὅρος κ̣[α]|μίνου καὶ | ἐδαφῶν | πε[πραμέ|νων ἐπὶ λύ|σει- (in the school museum at Laurion). 2747, 2748, 2750 seem to belong to the second half of the fourth century. The establishment mortgaged for one talent (2747) must have been of a fair size [149]; contrast the 700 drs. on *ergasterion* and slaves in 2749 (though this is not necessarily the full value of the property). 2747 and 2748 need not refer to mining *ergasteria*, though there is a strong presumption that they do. That there were other forms of property in this region is apparent from the χωρίον purchased by - - - ίδης Διοκλέους Σουνι from . . $^{c.5}$ . . ν Θεοφίλου ᾿Αναφλυσ. for 800 drs. (*IG* II^2 1596, 26–8 mid-fourth century), and the χωρίον of 2714. Some parts of the region were by no means desolate, as is shown by the existence of sacred domains.[151] The Φιλημονιακὸν μέταλλον of 2638 appears again in Crosby 16 $a + b$ = Face A of Col. II, 65–6, but the purchaser is not otherwise known. This question of using boundary or mortgage *horoi* to supplement the information from the lease lists is made the more difficult and uncertain through the practice at Laurion of giving the same name to more than one mine.

In general, the conclusion is unavoidable that the surface boundaries as recorded in the διαγραφαί were inadequate for the accurate delimitation of mining concessions,[152] especially the delimitation of boundaries below the surface of the ground, *i.e.* the fixing of divisions between one concession and the next as far as the underground workings are concerned, particularly in regions where mines were rather close together. Where one mine acted as boundary to another, how was this division carried below the surface? The question naturally arises, was there some form of underground delimitation as well? Here we are brought back to a question of terminology and to a well-known crux already mentioned above (p. 201).

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[143] Possibly also mentioned Crosby 15. 47 (more probably purchaser's deme). Kahrstedt, *Staatsgebiet* 31 n. 2 suggests this mine belongs to a deme, and so gets its name. It may well be so, since demes could own property, but it tells us nothing of the general position.

[144] At Kypriano. See *AM* XII (1887), 300 ff.

[145] No note 145.

[146] *IG* II^2 2653 is a marker stone on property guaranteeing the estate of minors. For ἀποτίμημα, cf. *IG* II^2 2642 ff., *termini fundorum pigneratorum* (*cf.* Fine, *Horoi* 116–41, and the literature there quoted, and M. Finley, *Studies in Land and Credit in Ancient Athens* 38–52; *IG* II^2 2653 = Finley 155, no. 129; 2642 = *ibid.*, 152, no. 121. The text of 2653 is ὅρος | ἀποτιμ|ήματος | Εὐβοίο | παί[δ]ων | ᾿Οῆ[θεν]. Several such estates appear in the accounts of the *poletai*.

[147] See above pp. 203–04.

[148] 2747, Finley, *Studies in Land and Credit* 142, no. 88; I. A. Meletopoulos, Πολέμων IV 63–4. 2748, Finley 143, no. 89.

[149] It was probably somewhat smaller than the *ergasterion* of Pantainetos, Dem. XXXVII 4.

[150] No note 150.

[151] See below, p. 246, for the purchase of land in the mining region and pp. 227 ff. for Schönbauer's view of divided ownership between the State and private persons. For the question of the demes of landowners in the mine region see p. 246. For the sacred domains, *cf.* that of Zeus, *IG* II^2 2606, found at Thorikos, hόρος | ἱεροῦ | Διὸς | Αὐαντῆ|ρος. *Ibid.* 2493, 2494. 2493 (*cf.* Wilhelm, *Arch. Pap.* XI 203–5; Finley, *Land and Credit*, 250 n. 38) records the leasing of a temple domain, whereon are cultivated πυροί and κριθαί, with vines, figs; 2494 (*cf.* Wilhelm, *op. cit.*; Finley, *op. cit.*, 261 n. 117, 283 n. 37) is the lease of a similar estate of Apollo Lykeios, and contains references to trees, including olives and figs (and other ἀκρόδρυα), and provision for irrigation. 2494 was found at Sounion.

[152] No surviving mine *horoi* give measurements and distances, as the *horoi* of burial places sometimes do, *IG* II^2 2562–6.

It has been seen that the term ἐπικατατέμνειν appears in Dem. XXXVII 36 in a reference to an offence under the μεταλλικὸς νόμος,[153] the body of laws regulating the exploitation of the mines. In the clause ἂν ἐπικατατέμνῃ τῶν μέτρων ἐντός the word clearly refers to 'an additional cutting', most likely below ground.[154] Equally applicable to activity below ground is another reference (38) in the same passage to an offence within the scope of the actions arising from the μεταλλικὸς νόμος, *viz.* the μεταλλικαὶ δίκαι: τὰς μεταλλικὰς εἶναι δίκας . . . . τοῖς ἕτερον συντρήσασιν εἰς τὰ τῶν πλησίον. In both it is clear that a boundary is illegally crossed, but the nature of the boundary is not wholly clear, except that in the second example the proximity of another mine is shown. The μέτρα of Dem. XXXVII 36 are difficult to understand by reason of ἐντός. It is quite clear from Hypereides IV (III) 35 (φήναντος γὰρ Λυσάνδρου τὸ Ἐπικράτους μέταλλον τοῦ Παλληνέως ⟨ὡς⟩ ἐντὸς τῶν μέτρων τετμημένον . . . . . .) that this does not mean an additional shaft or other form of working (ἐπικατατομή; see above p. 201) made in the area of a mine as fixed by the lease record, but something outside and illegal. Hence the difficulty of ἐντός, where we would expect ἐκτός with μέτρα meaning 'boundaries'. Hypereides' statement sounds very bald, and we may suspect that he is here using some technical or legal phraseology (*cf.* τὰ μέτρα as of some well-defined and clearly understood μέτρα). Μέτρον (see LS⁹) can signify 'any space measured or measurable, length, size, in pl., dimensions'; the passages cited are mostly poetic and seem generally to mean 'distance'. In Xen. *Cyr.* VIII 5, 3: εἰδέναι ἕκαστον τὴν ἑαυτοῦ χώραν καὶ μέτρῳ καὶ τόπῳ, it could mean 'boundaries'.[154a] The meaning 'boundaries' seems not too well supported, better perhaps by the references under the heading 'limit, goal'. Dem. XXXVII 36 is not quoted, but Hypereides IV (III) 35 is. It is not clear from this latter passage whether Lysander the informer was himself a miner (as Teisis of Agryle (*ibid.* 34) may have been); indeed, the general tone of the passage makes it unlikely,[155] so it cannot be argued that the μέτρα were between one mine (of Epikrates) and another (of Lysander), but μέτρα, if the word means boundaries, were certainly underground boundaries: how else could it be claimed that the offence remained so long undetected? The lack of a neighbour seems at first sight to make the explanation of ἐντός even harder. The suggestion of the existence of a state mining domain within the limits of which (ἐντός) trespass was effected, as opposed to privately owned mines,[156] is discussed above. Those who have not accepted this explanation of μέτρα [157] have offered the explanation 'within the limits of a neighbour's concession', which brings us back to the difficulty of the case where there was not necessarily a neighbouring mine at all.

It is possible to avoid this difficulty if the procedure in opening up and delimiting mines be understood in this fashion. When a mine was opened for the first time (*kainotomia*) in an area where there were few or no other mines, one boundary or two might be named in the διαγραφή, for purposes of the location of the concession in a general way on the surface, while the sinking of vertical or more or less vertical shafts[158] would provide a base line or lines for simple calculations of distance and angle of the passages underground. In such an area and at times when it was desired to encourage the opening of new mines, too strict a limitation would not be imposed on the distances to which such workings might be carried from the named boundaries. Where mining was more active and the deposit of ore was discovered to be richer, stricter limitations (three or four boundaries in some cases) would be imposed.[159] These boundaries are the μέτρα, and in some cases they were adjacent mines. In such cases, if they were to be effective and accurate boundaries, the line of separation between one mine and the next would at some points be relatively thin walls of rock or ore. The exact length (μέτρον) to which the several mine operators might go must have been a matter for accurate measurement and frequent dispute. To extend a mine beyond such μέτρα was in effect to cut into the boundaries, and so pass within them (ἐντὸς τῶν μέτρων). What was true if there was a neighbouring mine was equally true if there was not: it was still a question of cutting ἐντὸς τῶν μέτρων, such μέτρα being especially important to preserve where the ore was rich, as seems to have been the case in the mine of Epikrates of Pallene,[160] for even if Lysander's figures are not to be believed (300 talents in three years) they must have had a certain verisimilitude.

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[153] It is to be noted that the μεταλλικὸς νόμος as here defined was concerned with the actual working of the mines (ἂν τύφῃ τις, ἂν ὅπλ' ἐπιφέρῃ, ἂν ἐπικατατέμνῃ τῶν μέτρων ἐντός. ταῦτ' ἐστὶν τἄλλα, ... together with dispossession: ἐάν τις ἐξίλλῃ τινὰ τῆς ἐργασίας), and to a large extent involved activities underground. The cases were ἔμμηνοι, and therefore such as were likely to hold up work. The offences of one τοὺς κοινοὺς παρελθὼν νόμους are clearly distinguished.

[154] As noted above, p. 201.

[154a] Dr. M. N. Tod observes to me, 'But I wonder if this does not mean simply "both in extent and in location".'

[155] The terms ὑπισχνεῖτο, ὑποσχέσεις, indeed, are repetitions of the ὑπισχνουμένου referring to Teisis, but note φήναντος . . . Λυσάνδρου as opposed to the ἀπογράψαντος of Teisis. For the application of the φάσις *cf.* Lipsius, *Das Attische Recht und Rechtsverfahren* 309–16, and Harpocration *s.v.* 'φάσις'· λέγεται μὲν καὶ ἐπὶ δημοσίου ἐγκλήματος, ὅταν τις ἀποφαίνῃ τῶν δημοσίων ἔχοντά τινα μὴ πριάμενον . . . . and *Lex. Cantabr.* p. 667. 23: Καικίλιος δὲ ⟨φάσιν⟩ φησὶν εἶναι ἣν κατὰ τῶν τὰ δημόσια μέταλλα ὑπορυττόντων ἀποφέρουσι καὶ καθόλου τῶν τὰ κοινὰ κλεπτόντων. ⟨φάσιν⟩ suppl. Lipsius.

[156] Such as Epikrates' mine was ultimately ruled to be (ἴδιον, IV (III) 36). See above, p. 206.

[157] See Boeckh, *op. cit.* (note 29 above) 482–3.

This seems to be the best explanation of ἐντός, slightly different from the sense it appears to have in Hdt. VII 100: ἐντὸς τῶν πρῳρέων . . . καὶ τοῦ αἰγιαλοῦ, *i.e.* 'within' meaning 'between', which applied to the mines would have to mean between two boundaries, not of the same mine but of two different mines, thus emphasizing the intervening unexploited area.[161]

The lease inscriptions at first give an impression only of vague delimitation (*cf.* Crosby 1) but closer inspection shows that this is not always so and that accurate boundaries, corresponding to some kind of underground division, must have existed: *cf.* the cases where the owner of the '*edaphe*' is named also as owner of land adjacent (Lysitheides, Crosby 19. 6–7; Nikeratos 19. 24 and 26; in the following cases a restoration is involved: Pheidippos of Pithos 15. 42–5; Lysitheides 6. 10; children of Euthykrates 19. 11–13; children of Lysitheides 29. 4 and 7), and registrant or lessee also owner of land adjacent (Eudraon 20. 17–19; Diochares 14. 15 and 19; with restoration: Mnesidamas 16b[161a] 3, 7, 9, 10). Here a clear boundary must have been drawn underground if not above. A curious case is Crosby 1. 72 ff., where an area is delimited which is bounded on one side by the *ergasterion* of Kephisodotos, and therefore almost certainly by the land of the same man, and extends into the land of Kallias of Lamptrai (l. 73), and is bounded on this side by the house and tower of Kallias. The underground boundaries must therefore cut across the land both of Kephisodotos and Kallias.[161b] Such clear-cut boundaries must have been determined by mutual consent.

Where several mines were located close together, the boundaries must have been very narrowly determined underground, cf. *e.g.* Crosby 18, in a rich region at Besa: the Herakleion of Besa forms the western boundary of one mine (18. 12) and the southern boundary of another (18. 21–2): even if the Herakleion included a cultivated domain they cannot have been far apart. Even closer are the two mines both named Heroikon and the mine Teisiakon in *IG* II² 1582. 56 ff. The Heroikon (I) is bounded on the north by another Heroikon (II) and on the south by the Teisiakon, and if the *ergasterion* of Konon here mentioned as a north boundary is the same as that mentioned as the east boundary of the mine Phaneion (*ibid.*, ll. 129 ff.), there are in fact four mines in a row. Where *ergasteria* are given as boundaries it is not clear whether they include an area of land, but in any case the underground boundaries are close to each other. The curious contiguity of the two mines named Heroikon *IG* II^2 1582. 56 ff., and of two named Artemisiakon in Crosby 20. 6–12 is difficult to explain. It is, indeed, possible that they represent one original mine for some reason divided between two lessees.

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[158] See Ardaillon, *Les Mines* 41–2.

[159] To some extent the question would arise of agreement with the owners of surface property adjacent to the '*edaphos*' in which the mine was sunk (*cf.* Crosby 1. 67–71).

[160] Hypereides IV (III) 35.

[161] ἐντὸς ἀπέργουσαι of Hdt. III 116, cited by Boeckh, seems to have no application here.

[161a] *Hesperia* V (1936), 397–8.

[161b] The mine is expressly stated to be in the land of both.

Where mines and *ergasteria* are close together the question of the disposal of spoil dumps was obviously a difficult one, and this is a problem, like that of right of access, on which we are singularly ill-informed. It is to be supposed that such were matters for mutual agreement before the registration of the mine: we have no examples of written agreements of this sort, but they would have been such as the agreement *IG* II^2 2491, which seems to deal with water supply (ll. 9 ff.): ἐ|ξεῖναι αὐτοῖς ἄγε|ιν ὑπονόμους διὰ τ|οῦ χωρίου ὁποίαι ἂ|ν βούλωνται καὶ ὁπ|όσους ἂν βούλωντα⟨ι⟩ | . . . .

It has been seen that the dividing line between one mine and another could be thin enough. Thus, as is apparent from Dem. XXXVII 38, it was possible to bore from one mine into another and join up two sets of workings. In the richer areas this might happen frequently, and the μέτρα would then be of even greater importance. Such joining-up might be done with the knowledge of both parties, for practical purposes, *e.g.* for purposes of ventilation, or surreptitiously (which seems to be the case foreseen in the passage mentioned). It would also be possible to penetrate thus into a neighbouring mine for the moment inactive, which if worked without the knowledge of the *poletai* would be an ‘ unregistered mine ’. It is worth pointing out here that unregistered mines of this sort stood a better chance of remaining undetected than the sort which started from unauthorised operations on the surface, which were bound to attract attention from the curious even if the owner of the surface land was in collusion.

This question of irregular and unlawful digging recalls another possible piece of evidence for the organisation of subterranean boundaries. There appears to have been a mining offence for which Diphilos was condemned to death in the period of Lycurgus, defined (in *Vit. X Or.*, Plutarch, *Mor.* 843 D) as τοὺς μεσοκρινεῖς ὑφελεῖν, or (in *Lex. Seg.* 315) as ὑπορύττειν τὸ μέταλλον. The conception seems to have existed up to the present (mainly under the influence of a fragment of a lexicon appended to Dobree’s Photius (673): μεσοκρίνη (μεσοκρινεῖς): οὕτω δὲ λέγονται οἱ ἐν τοῖς ὑπὸ γῆν ἔργοις στῦλοι, οἳ ὑποβαστάζουσι τὰ βάρη τὰ ἐπάνω τῶν μετάλλων. εἰσὶ δὲ ἐξ αὐτῆς τῆς γῆς καταλελειμμένα ὑπερείσματα) that large cavities (such as are known to exist in the mines [162]) were supported by pillars, and that the cutting down of these was so severely punished because of the danger to life. The idea has become firmly rooted of a series of separate columns. Yet there is little practical justification for such a view. The large cavities are relatively rare: narrower workings would not need them; why, if the purpose is the support of the roof, leave columns of valuable ore when packing of rock or supports of timber would do as well (timber seems to have been used in the mines, probably for this purpose,[163] and Ardaillon’s account of the mining of large deposits of ore suggests the use of rock for such a purpose)? In any case in an individual and separate mine the offence of cutting down supporting columns would bring its own punishment on the offender in the form of his death or that of his slaves (who were his capital or for whom he was liable). Most cogent seems to be the fact that this offence is not mentioned among the μεταλλικαὶ δίκαι in Dem. XXXVII 35–8.

Despite the definition given by the lexicon fragment, which is one relating to the supposed supporting function of the pillars, the word defined, μεσοκρίνη (μεσοκρινεῖς), in fact clearly means ‘ dividing in the middle ’.[164] The idea of division appears again, coupled, indeed, with the idea of boundaries (ὅροι), in certain other passages where there occurs the term ὅρμος, usually translated ‘ pillar ’.[165] Cf. *Lex. Seg.* 205: ἀποσέσχεν (?) τοὺς ὅρμους τοῦ μετάλλου: ἀποσέξαι τὸ διασεῖσαι καὶ κινῆσαι. ὅρμοι δέ εἰσιν ὥσπερ κίονες τοῦ μετάλλου, οὗτοι δ’ ἦσαν καὶ ὅροι τῆς ἑκάστης μερίδος, ἣν ἐμισθώσατο παρὰ τῆς πόλεως, and *Lex. Seg.* 286: ὁμοερκεῖς κίονες: οἱ τῶν μετάλλων κίονες, where the ‘ pillar ’ idea is present, but coupled with ὁμοερκής, which is defined by Harpocration *s.v.* ‘ ὁμοερκές· ’ Δείναρχος ἐν τῷ πρὸς τὴν Καλλίππου παραγραφὴν ἀντὶ τοῦ ὑφ’ ἓν ἕρκος, τουτέστιν ὑπὸ τὸν αὐτὸν περίβολον. (Note that from the same speech of Deinarchos comes also the gloss of Harpocration *s.v.* ‘ ὑπονομεύοντες· ’ ἀντὶ τοῦ ὑπονόμους ὀρύττοντες· Δείναρχος ἐν τῷ κατὰ Καλλίππου.) The idea is obviously one of ‘ enclosing ’. Cf. *Lex. Seg.* 286: ὅροι: ὅτι κατὰ μέρη τινὰ ἐμισθοῦντο τὰ ἀργύρεια, ὅροις διακεκριμένα. Here the ὅροι and μερίδες (μέρη) of *Lex. Seg.* 205 appear again. If 286 *s.v.* ‘ ὅροι ’ stood alone, the reference could be taken to the surface *horoi*, but *ibid.* 205 and the κίονες of 286 hardly allow this. That the compilers of lexica misunderstood their sources, and were often muddled in the extreme, no one will deny, but it is clear that the question is something more than a mere matter of supporting pillars. The idea of division is obviously strong; it cannot be argued with any reason that these compilers were confused by the idea that κίων equals στήλη or ὅρος; there is still the idea of ‘ cutting down ’ the pillars to prevent this confusion.

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[162] Ardaillon, *Les Mines* 138–9.

[163] *Cf.* the timber imported by Meidias, Dem. XXI 167.

If there were dividing pillars (μεσοκρινεῖς, which also in a sense enclosed, ὁμοερκεῖς), what did they divide? First and foremost one mine and another. It need not be supposed that they were always in the form of true pillars. They could be sections of rock wall, but when they were pierced by passages connecting one mine with another they could take on the shape of pillars. A plausible case can be made out for this intercommunication of mines,[165a] on the ground that in the enumeration of offences under the μεταλλικαὶ δίκαι there seems to be an effort made to protect the interests of mine operators engaged in concessions which are side by side. These may be partners,[166] whose specifically mining interests are protected by the μεταλλικὸς νόμος (as their more general legal relations[167] are the concern of the ordinary courts), but distinct from partners are ‘ τοῖς ἕτερον συντρήσασιν εἰς τὰ τῶν πλησίον ’, clearly not partners but workers of a neighbouring mine. To such, it is suggested, in circumstances of intercommunication between mines, refer the offences ἂν ὅπλ’ ἐπιφέρῃ (a battle about the boundaries), ἐάν τις ἐξίλλῃ τινὰ τῆς ἐργασίας (when violence has brought about encroachment or dispossession), and ἂν τύφῃ τις,[168] which, whether it represents ‘ fill the workings with smoke ’ (reading τύφῃ with Bekker) or ‘ set fire to the mine ’ (ὑφάψῃ, vulg.), seems to indicate an offence underground affecting two or more sets of mine workings and miners.[169] Indeed, if cutting down the pillars was held to endanger the roof, to make sense of this in the peculiar circumstances of antiquity (see above) other free individuals (not partners) must have been involved in the vicinity. Finally, it is just possible that a division by pillars for administrative purposes existed within the individual mine unit, dividing it into sections [170] for purposes of leases and calculation of payments. This aspect of the underground organisation is really a matter for discussion in connection with tenure and forms of payment, but it may be pointed out here that some such subdivision, which need not have been universal, would explain how there could be small concessions, and how small operators without any great expenditure on preliminary works could engage in mining.

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[164] So LS^9, though it goes on to the explanation μεσοκρινής (sc. κίων) a ‘ pillar left *as a support* in working mines ’, a definition obviously influenced by that of the *Lex. Seg.*

[165] The relevant passages are set out by Boeckh, *op. cit.*, 439: *Vit. X. Or.* 843 D, on Lycurgus’ speech against Diphilos; Pollux III 87, VII 98; *Lex. Seg.* 280; Photius, *s.v.* ‘ μεσοκρινεῖς ’.

[165a] *Cf.* the great complex of workings, given in plan by Ardaillon, *Les Mines* 42, pl. II, which must have been commenced from different points and as separate sections, later joined together.

[166] Dem. XXXVII 38, τοῖς κοινωνοῦσι μετάλλου.

[167] *Ibid.* 37.

[168] Bekker τύφῃ, for MSS., τυφῆ A: ὑφῆ S: ὑφάψῃ vulg.

[169] Such a case of trespass could have been the background of the speech falsely attributed to Deinarchos, Πρὸς Μήκυθον μεταλλικός (Baiter and Sauppe II 325). *Cf.* what is said of it in Dionysius’ *Index* to the speeches of Deinarchos: ἐπὶ Νικομάχου ἄρχοντος εἴρηται ὁ λόγος οὗτος· (341/40 B.C., a period of considerable mining activity). φησὶ γὰρ ὁ λέγων ἐπ’ Εὐβούλου μὲν μισθώσασθαι τὸ μέταλλον, τρία δὲ ἔτη ἐργασάμενος, ἐκβαλλόμενος ὑπὸ τοῦ πλησίον ἔχοντος μέταλλα, λαχεῖν αὐτῷ τὴν δίκην κατὰ Νικόμαχον ἄρχοντα. There is, however, another possible interpretation. See note 284*a* below.

C. *Tenure and Payment*

The nature of the tenure of the silver mines has been to some degree debated above.[171] The form of payment and the mode of its determination involve many difficulties. As in the question of the status of the mines, so in this connection also the lease lists have thrown some light on the problem in matters of detail, while leaving certain important points obscure. The information from other sources is of unequal value and much debated, therefore both it and the comment based thereon by modern scholars will be summarised at this point before the evidence from the lease lists is examined.

The general principle of payment (whether called ' purchase ' or not [172]) is clear from 'Αθπ. 47, 2, coupled with a period of tenure of *three* years for *ergasima*, and one of uncertain length for συγκεχωρημένα (see above, pp. 201–03 and below, pp. 237–8). The connection of registration with the determination of boundaries is clear from the lexicographers.[173] The avoidance of registration, as an offence taking the form of the secret working of mines, is made clear by contemporary evidence,[174] which also shows the right of denunciation in such cases.[175] The lexicographers also supply evidence of this,[176] and speak [177] of mine operators making the declaration ὅπου βούλοιντο καινοῦ ἔργου ἄρξασθαι, and effecting the registration for the purpose of paying one twenty-fourth of the product of the new mine.[178] To this payment Harpocration and ' Suidas ' *s.v.* would apply the term ἀπονομή, further defined by the term ἀπόμοιρα, *i.e.* ' distribution '. These definitions are obviously based on the orators, though we have no other reference to the payment of one twenty-fourth. In the orators payments for mining concessions are mentioned, as noted above (pp. 205–06). In Dem. XXXVII 22 (in the indictment) Nikoboulos is charged with ordering his slave to seize from Pantainetos' slave a sum of money which is an instalment (καταβολή: the exact sum is not mentioned) of the ' purchase ' price (ἐπριάμην, see above, pp. 205–06) of a mine, for which the total payment of 90 minae is mentioned. Thereby Pantainetos became liable to a double payment (as he represented the story it is made to sound like twice 90 minae, but the sum would depend on the number of instalments on which he defaulted).[179] Again in (Dem.) XLII 3 and 32 there is mentioned the confiscation of a mine (δημευθέν), and the speaker claims that he became liable to a payment of three talents, one talent for each of three shares (μερίδες). This is generally regarded as an example of a mine regularly leased, in the case of which the other partners defaulted and left the third to carry the liability, but it is not quite clear that this is so. The statement of the speaker's circumstances is interesting. He is certainly not a guarantor, as *e.g.* there were guarantors for those who purchased certain rights from the *poletai*,[180] and were therefore liable for the defaulting of others to the tune of twice the sum originally involved.[181] He was a direct participant in mining operations, who by hard personal work (so he says) made a certain fortune (*ibid.*, 20). It is generally accepted that he was a partner in a mine which was confiscated,[182] and that he was somehow responsible for his partners' deficiencies as well as his own. There is no direct evidence of this: it is based on a particular interpretation of μερίς. Another interpretation, and in many respects a better one (see above p. 207), is that the speaker himself held three shares in a mine and could not meet his obligations. But in this case the δημευθέν is awkward. The speaker's words are curious: 'I, *too*, shared in *the* confiscated mine.' Some well-known case seems indicated, in which others had been involved (two others, therefore three shares of the liability fell on the speaker, since perhaps the others had no assets). Does it not seem reasonable to conclude that this confiscation was carried out because the mine was an ἀναπόγραφον μέταλλον, and a well-known case at that? The sums involved in this case are therefore the profits irregularly made and now required by the State; *cf.* the cases of Philippos and Nausikles, and Epikrates and partners in Hypereides IV (III) 34–5. The date of (Dem.) XLII seems to be about 330 B.C.,[183] and the date of Hypereides IV (III) between 328 and 323 B.C.[184] It is not unlikely, therefore, that in (Dem.) XLII 3 we have an example of the sycophantic attacks mentioned in Hypereides IV (III) 33 (not necessarily in this case unjustified), followed by losses (ȝημίαι) and confiscation.[185] There is, indeed, a curious and striking parallelism of ideas in the κοινὴ ἀτυχία (3) and κοινῇ πᾶσιν βεβοηθήκατε τοῖς ἐν τοῖς ἔργοις (31) of (Dem.) XLII, and in the sycophantic activity (34–5), καινοτομίαι ⟨αἱ⟩ πρότερον ἐκλελειμμέναι (36), and assistance given by the courts followed by renewed activity as indicated in Hypereides IV (III). There seem, therefore, grounds for supposing that the three talents here involved throw no light on the normal working of the mines. The same is true of the three hundred talents which Lysandros undertook to recover from Epikrates of Pallene and his associates [186] as the proceeds of alleged unlawful mining.[187] This is the sum promised by an informer: it has no value except as an indication of the likelihood of large sums being involved. In similar fashion in the case of Diphilos, put to death for cutting down the μεσοκρινεῖς,[188] the 160 talents distributed to the citizens is a part or the whole of his entire *fortune* (it is not clear that the whole was distributed), not of his *profits* from the mines (ἐκ τῆς οὐσίας). On the other hand, the sum of 20 minae is borrowed [189] by Mantias and Mantitheos from a banker for the purchase of mines. On the father's death the son assumed liability for the debt (τὸ δάνειον δ' αὐτὸς εἰσεπράχθην), while sharing the mines with his co-heirs, Boiotos and Pamphilos (τὰ μέταλλα πρὸς τούτους ἐνειμάμην). It is not, however, clear that the 20 minae comprised the whole sum spent on mines (it could be so: πρὸς τοῖς ἄλλοις must mean 'in addition to other expenditure'). There is not much left, therefore, in the literary sources on this question of payments or profits, to indicate the type of sum involved: a certain 90 minae in Dem. XXXVII 22 and at least 20 minae in (Dem.) XL 52. From these should be kept distinct the 20 drachmae exacted by Moirokles from each purchaser of mines,[190] which was a form of bribe or ‘rake-off’ exacted in some official capacity.[191]

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[170] Perhaps the μερίδες of *Lex. Seg.* 205 and μέρη of *Lex. Seg.* 286. The subdivision of mines in this fashion might also suggest an explanation of the word ὅρμος otherwise obscure (see LS^9; it is difficult to connect the primary meaning of ὅρμος = chain (as given by LS^9) and its derived meanings, with ὅρμος = a pillar (not quoted in LS^9)). Could it mean a ' chain ' or ' series ' formed of a number of uniform divided yet similar elements (*cf.* a necklace), applicable to the development of an ore-bearing seam because of its division into ' stalls ' or sections (to which Boeckh, 420, 467–8, was inclined to attach the term *ergasterion*) divided by μεσοκρινεῖς? A ' string ' of them in fact! These separate μερίδες might be worked by partners or by unassociated individuals. In this case there arose the need to protect them from danger and injustice. *Cf.* the observation above (p. 222) on Crosby 20. 6–12 for the possible division of a mine.

[171] Pp. 205 ff.

[172] Note that ' purchase ' is not inappropriate, since the ore was removed and the state of the concession was radically affected.

[173] Harpocration and ' Suidas ', *s.v.* διαγραφή.

[174] Hypereides IV (III) 34: λέγοντος ὡς ἐξ ἀναπογράφων μετάλλων πεπλουτήκασι.

[175] *Ibid.*; see n. 155 above.

[176] ' Suidas ' and Zonaras *s.v.* ' ἀγράφου μετάλλου δίκη '.

[177] Harpocration and ' Suidas ' *s.v.* ' ἀγράφου μετάλλου δίκη '.

[178] ' New ' here must mean ' fresh, additional, just started ' rather than new in the sense of a *kainotomia.*

[179] Pp. 238–9 below.

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[180] *Hesperia* V 401, 405–6, 411–12.

[181] *I.e.* the ἐγγραφῆναι τὸ διπλοῦν τῷ δημοσίῳ of XXXVII 22.

[182] This seems clear enough from *ibid.* 3: μετέσχον γάρ, ὡς μή ποτ' ὤφελον, κἀγὼ τοῦ δημευθέντος μετάλλου. For partnership, *cf.* Xenophon, *Vect.* IV 32: οἷόν τε (οἴονται, see n. 207 below) δὴ οὕτω καὶ ἰδιώτας συνισταμένους καὶ κοινουμένους τὴν τύχην ἀσφαλέστερον κινδυνεύειν.

[183] Blass, *Attische Beredsamkeit* III² 1, 505; Kirchner *PA* 13978 and 14734.

[184] Date generally given is between 330 and 324 B.C., *RE* IX i 284; Christ, *Gesch. Gr. Lit.*⁴ 422.

[185] See Meier-Schömann-Lipsius 311 n. 8 for certain points on XLII.

[186] *Cf.* μετεῖχον with μετέσχον of (Dem.) XLII 3.

[187] Hypereides IV (III) 35.

[188] Plutarch, *Mor.* (*Vit. X Or.*) 843D, on Lycurgus.

[189] Dem. XL 52.

On the question of the length of tenure the literary evidence is scanty and ambiguous. ’Αθπ. 47, 2 has already been mentioned, where *ergasima* are said to be leased for three years; the reading ⟨δέκα⟩ for the other category of συγκεχωρημένα, as printed by Sandys, *Aristotle's Constitution of Athens*^{2} (*cf.* Kenyon's [ῑ] in O.C.T.) 184, rests on the resemblance of the numeral in the papyrus to either γ̄ or ῑ. Three years are excluded as already given to *ergasima*. If both types of concession were to last the same period, a separate and distinct reference to συγκεχωρημένα would be pointless. The reading ῑ (=10) has much to justify it; *cf.* the μισθώσεις τῶν τεμενῶν (’Αθπ. 47, 4) for ten years,[192] but the τεμένη (presumably remaining in one unvaried state of development) show no second period of leasing corresponding to the *ergasima* among the mines (a more limited lease period based on increased and more accurately assessable productivity). Therefore the cogency of the ten-year period for mines also is reduced.[193] There are also cases, in other forms of lease, where no period is mentioned (cf. *IG* II^2 1590–2, a perpetual lease on a yearly basis), or where it is longer than ten years (cf. *IG* II^2 411, discussed above pp. 207–08, where it is twenty-five years). There is therefore a *possibility* of ten years being the period for συγκεχωρημένα, but that is all as far as other evidence than that of the mine leases is concerned.

There follows the question of instalment payments, of which we have a mention in Dem. XXXVII 22 (καταβολή). In the purchase of tax-collecting rights[194] and of τὰ τέλη τὰ εἰς ἐνιαυτὸν πεπραμένα there were cases of diverse numbers of instalments, ten (one per prytany), three or one (due in the ninth prytany). In Dem. XXIV 93, 98, there is a reference to payments in the ninth prytany which seems to infer that those behindhand with their payments were very soon sold up. The instalment system was also used for the purchase of confiscated property publicly sold, five yearly instalments for houses and ten for land, payable in the ninth prytany. The yearly instalments may relate to cases where there was a seasonal income (*cf.* the yearly payment on the μισθώσεις τῶν τεμενῶν), though this would not apply to houses thus purchased. On the other hand, where the object of the payment was not one exposed to such conditions, a payment was due in each prytany: *cf.* (Dem.) LIX 27 for the πεντηκοστὴ τοῦ σίτου, where the instalments due to the Council were to be paid in each prytany, and the various taxes listed in the *poletai* record *Hesperia* V (1936), 401, where the same was the case. We are not informed when the payments were made for the mine leases, but it seems likely, to judge from the practice just mentioned, that it was in each prytany. In Andocides I 133 it sounds as if the bidding for certain public contracts was on a yearly basis, but ’Αθπ. 47, 2 records an elaborate system of temporary record lists corresponding to the number of payments due per year: ten in the case of prytany payments. We may anticipate a certain amount of discussion of other considerations based on the lease lists (below pp. 238–9), and say that it seems most likely that such λελευκωμένα γραμματεῖα existed in the case of the mine leases, and were the basis of the διαγραφαί, which therefore record prytany payments, as seems to be indicated by the organisation of some of them. These prytany payments were, in effect, instalments of a price determined beforehand (see below pp. 229 ff., 238), by the State in some cases and by competitive bidding in others.

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[190] Dem. XIX 292–3.

[191] Kirchner, *PA* 10400 ‘*Ab Eubulo Probalisio* δίκῃ μεταλλικῇ *reus factus Dem. XIX 293*’ seems to rest on a misunderstanding.

[192] See possible parallels given by Sandys *ad loc.* from other sources.

[193] See Calhoun 354–5.

[194] ’Αθπ. 47, 3. *Cf.* the episode in Andocides I 133–4, which mentions a bid in the form of a lump sum, outbidden in the Council for 36 talents.

(i) *Previous Theories and Conclusions.*

These questions have long been examined by modern scholars, who, for the most part, have based their conclusions on such evidence as we have considered above. Boeckh (' Abh. über die Laurischen Bergwerke', *Kleine Schriften* V 1 ff.; trans. in *Public Economy of Athens* (London, 1828), hereafter 'Boeckh') possessed neither the 'Αθηναίων πολιτεία nor the διαγραφαί.[194a] Ardaillon (in *Les Mines du Laurion* (Paris, 1897), hereafter 'Ardaillon') knew the 'Αθπολ. and a limited number of lease inscriptions published in *CIA*, as did H. Francotte, *L'Industrie dans la Grèce ancienne* (1900), Lipsius, *Das attische Recht und Rechtsverfahren* (Leipzig, 1905–15). Schönbauer (*Beiträge zur Geschichte des Bergbaurechtes* (Munich, 1929), and ' Vom Bodenrecht zum Bergrecht. Studien zur Geschichte des Bergbaurechtes ', *Zeitschr. der Sav. Stift.* (R.A.) LV (1935), 183 ff., hereafter respectively ' Beiträge ' and ' Studien '); Calhoun (*Journal of Economic and Business History* III (1930–31), 333 ff., hereafter ' Calhoun '), Momigliano (*Athenaeum* X (1932), 247–58, hereafter ' Momigliano '), and Kahrstedt (*Staatsgebiet und Staatsangehörige in Athen* (Berlin, 1934), hereafter ' Kahrstedt ') all possessed the collection of *poletai* records contained in *IG* II², to which the Agora excavations at Athens have added the collection published by Crosby in *Hesperia* XIX (1950), 189 ff. These important works discuss among other things the problems of the status (see above pp. 205 ff.), tenure and system of payments relating to the mines,[195] combining all three problems in their treatment. In all of them, except Crosby, the epigraphical evidence plays a lesser part than the other sources, as is to be expected from the relatively small number of lease lists possessed by them. The varying views expressed on the problems in question may be set out thus in outline: (I) Mining took place in state land, with the granting of mining concessions by the State to individuals in perpetuity or for a period in return for some form of payment. Basic to this view is the association under the same control (*i.e.* that of the State) of mining rights and surface land. The idea of a ' *Bergregal* ' is rejected (see II). Holders of such a view do not deny that mining in private land may have existed, but they can produce no evidence for it. (II) opposed to (I). In all cases the State held the mining rights both in private and public land; these rights it conceded to individuals in return for some form of payment, *i.e.* there existed a ' *Bergregal* ' or ' *droit régalien* '; there is no satisfactory English term, perhaps ' Mineral Rights ' is best. (III) Tenure was either by perpetual lease from the State or else by lease for a period. (IV) Payment was either an initial payment for the perpetual lease coupled thereafter with an annual tax, determined each year on the product (to be distinguished from a fixed tax levied on mines in private property if such existed), or an annual rent determined beforehand for the whole of the limited period of the lease. Somehow, it is generally felt, the payment of 1/24 mentioned in the ' Suidas ' lexicon must be connected with the annual tax or the annual rent.

The question of the status of the mines has already been debated, and little need be added to what has been said above in connection with Kahrstedt's views. No evidence adduced by Schönbauer [196] can rebut the clear evidence of the lease lists that there were mines under land in private possession, mines which nonetheless were under the ultimate control of the State, and were leased in very many cases to individuals who were not the owners of the surface land. The denial of the existence of a ' *Bergregal* ' by Kahrstedt and Schönbauer, however cogent in theory the argument from Hellenistic–Roman law,[197] cannot stand against the evidence of the lease lists, and Ardaillon, Calhoun, and Momigliano all accept the idea of the ' *Bergregal* '. But it is to the credit of Kahrstedt and Schönbauer that they alone have really tackled the implications of this separation or association of mine and surface land. Boeckh regarded the mines as the property of the State, but took no account of the surface land, and little account has been taken of the problems arising from it by more recent writers except the two mentioned. Apart from their historical juristic preoccupations, they sought to show that the mines lay in a state domain (' freed ' [198] at some time, perhaps in the fourth century B.C., for exploitation by private individuals), and that Laurion (using the term for the whole mining region) was for the most part barren, so that there can have been few surface landowners. Schönbauer could not believe that the state control of mining could be combined with private ownership of the surface, for he perceived the difficulty which would arise in defining and reconciling agricultural and mining interests,[200] and indeed any surface interests of private individuals *vis-à-vis* those of operators of mines. He makes an important point,[201] which seems to have been neglected in general, that it is false to assume that mining activity left the surface land unaffected. Ardaillon, indeed, thought the surface land was of so little value that no question of compensation arose. But there were surface works and spoil dumps (σωροί), and in any case the question of access presented itself, a question which seems all the more important when the picture of the mines won from the mine leases is carefully considered (pp. 221–2 above). This is a great puzzle, for we hear nothing of this question, but Schönbauer and Kahrstedt are clearly wrong in concluding the existence of a barren State domain, to get out of this difficulty of the silence of our sources.[202]

[194a] See note 29 above.

[195] *RE* and *DA* add little or nothing. See n. 1 above. Davies, *Roman Mines in Europe* 246–51, has little to say on Laurion. Forbes, *Metallurgy in Antiquity* (Leiden, 1950), is concerned mainly with the technological aspects.

[196] In the question of the references in the διαγραφαί to mine locations ἐν τοῖς ἐδάφεσι coupled with the name of a person, Schönbauer, *Beiträge* 28 and *Studien* 203 produces the unsatisfactory explanation that these are mere place-names (*Ortsangaben*) and '*juristisch farblose Bezeichnungen zum Zweck der Lokalisierung*'; but he does not explain how these areas got these names (they would hardly be those of people renting them from the State); the example of Diphilos (the Diphileion) is not a normal one. In any case fathers and sons hold property not necessarily the same.

The question of tenure, and of the payment levied by the State on the mines, is distinct from the question of status,[203] except that Boeckh's explanation (453–4) of the mines as the property of the State let to individuals for perpetual possession in fee [204] introduces the question of payment also. Ardaillon (188–200) regards the mines as conceded to individuals on a limited lease, wherein he is followed by Momigliano and Calhoun, the latter of whom sees evidence for this (357–8) in the organisation and apparent standardisation of the galleries. Schönbauer expresses no clear opinion. He supposes some difference of practice between the fifth century and the fourth,[205] perhaps a change from large-scale leasing to private individuals (like Nikias?) to something else. He implies such a change when he speaks of a 'freeing' of the mining area.[206] What this 'freeing' was in terms of relations and payments between State and individual Schönbauer does not make very clear.[207]

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[197] *Studien* 206.

[198] S. makes the idea of a state domain thus ' freed ' (the Oros or Laurion) the basis of his theory. In *Studien* 194 he clearly does not like Kahrstedt's awkward view of: (i) the ex-Peisistratid domain taken over by the following régime, (ii) the area ἐπὶ Θρασύμῳ of the same status, and (iii) the acquisition of mining rights under *some* private land but not under all: but in his turn he is forced to extend the ex-Peisistratid domain from the commonly accepted north and south areas (*Studien* 205) to the central area as well, and further to make a technical distinction between χωρία in private possession in the less mountainous area, and the Oros.

No note 199.

[200] Cf. *Studien* 221–2.

[201] *Ibid.* 199.

[202] See *Studien* 204 ff. for valuable points on the appearance of private property in the mining area; *ibid.*193 ff., 200, 201–03 for the views of Kahrstedt, Ardaillon, Momigliano, and Calhoun.

[203] Unless it be assumed that there were mines in private property (and no ' *Bergregal* '), and the tax was levied on them which is mentioned in the new fragment of *IG* II² 1582, *Hesperia* V (1936), 401, ll. 129 ff.: καὶ ἑτέραν ἐγγύην ἐν τοῖς ἔργ|οις τὴν πεντεδραχμίαν· ἕκτην καὶ ἑβδόμην κ|αὶ ὀγδόην τρεῖς ταύτας ἑκάστην τὴν καταβ[ο]|λήν: ΗΔΔΓ: δραχμὰς . . .

[204] And, according to Boeckh (453), transferable to a third party by inheritance or sale, and yet free from liability to liturgies and open to foreigners on equal footing with citizens. The first of these ideas is based on a confusion of *metallon* and *ergasterion*. The second and third could hardly apply in such a case.

[205] *Beiträge* 16–18, 19.

On the problem of payment there is much difference of opinion. Boeckh's view is now purely of academic interest, but one or two not unimportant points arise from it. The perpetual lease, as he supposed it to be, was purchased by a payment down (454). In addition to the purchase money (456–7), the mine operator paid the twenty-fourth part of the gross product [208] as a varying yearly tax, not as a rent. By the employment of this form of perpetual lease with a proportional tax [209] Boeckh believed the Athenian State avoided the disadvantages of a lease for a term of years at a predetermined rent, namely ruthless and wasteful exploitation to extract as much as possible in the way of profit in the given time. In the case of the 90 minae of Dem. XXXVII 22 he feels a difficulty (454), that this sum 'cannot have been an annual rent, for as its amount depended on the product of the mine it could not have been definitely stated beforehand', and again (455) that 'it could scarcely have been compulsory upon a tenant to pay to the State the purchase money of a new mine if, after having expended his trouble and capital, he was unsuccessful in finding any ore'. He therefore concludes that 'any person was allowed to dig for ore in those parts of the mountain which had not yet been alienated, and that he was not compelled to purchase the soil until such time as he found productive ores and was willing to work them'.[210]

Ardaillon, Calhoun, and Momigliano alike couple with the lease of limited duration the predetermined rent. Some of the lease lists were known to Ardaillon, and he, like Calhoun, sought to combine the payments appearing in them with the one twenty-fourth of 'Suidas'. The rent was agreed beforehand by the operator and the *poletai* (Ardaillon 191), being determined by a sort of auction bidding (196), a natural principle for the determination of payment rates in leases of public property or purchase of tax-collecting rights. Ardaillon rightly rejects Boeckh's fixed payment. The one twenty-fourth of the 'Suidas' lexicon Ardaillon regards as a minimum,[211] the starting point of the bidding. The one twenty-fourth was therefore an estimate (194), to calculate which Ardaillon considers there was a sufficient basis in the extent of the surface area, previous productivity of *anasaxima*, average of preceding years (by which he must mean *ergasima*), number of slaves employed, and richness of neighbouring mines in the case of *kainotomiai*, though in this last category the State might be prepared to lose in the first period and raise the price by counterbidding in lease renewals.[212] The use of an estimate in determining the sums payable to the State is sensible enough; a predetermined rent payable over a period which is in itself limited,[213] though it might lead to ruthless exploitation of a profitable mine, had its great advantages: if the payments on the first lease were too low, they would later be adjusted to the advantage of the State (195). A proportional tax, varying presumably each year, would be difficult to determine, and would open the way to all kinds of sharp practice. The contract rent would be payable without regard to the success of the mine, and payable at the beginning or end of each prytany, which would presuppose that the operator had a little money to begin with.[214] It is difficult to understand why, in the face of Dem. XXXVII 22, Ardaillon suggests that the collection of these payments was farmed out, in which sense he interprets Harpocration *s.v.* ἀπονομή.[215]

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[206] He asserts, on the authority of Xenophon, *Vect.*, '*dass die Gruben damals nicht mehr an Zeitpächter vergeben waren. Wahrscheinlich war es unmöglich in jenen gefährlichen Zeitläufen kapitalskräftige Grosspächter zu finden*'. Note the rather different type of change from the direct exploitation assumed to prevail before the fall of Athens proposed by Fitzler, *Steinbrüche u. Bergwerke im ptolem. u. röm. Ägypten* (*Leipz. histor. Abhandlungen*, 1910, 14), who suggests that in the fourth century the State no longer exercised this right based on ownership, but it remained the basis of the State's control over the mineral rights even in land in private possession.

[207] Cf. *Beiträge* 19. Note his reading of οἴονται δὴ . . . . . in Xenophon, *Vect.* IV 32, for οἷόν τε δὴ . . . . . ., and comment.

[208] Not the net product, as it was felt that this would be too small. But it is difficult to see the difference, since the calculation would come ultimately to one of value per unit of ore. Both would be difficult to control, but the gross would be more difficult to measure and evaluate.

[209] This Boeckh somehow identifies with the revenue mentioned by Xenophon (*Vect.* IV 49) from furnaces and other publicly provided facilities in the mining region. It is quite clear, however, from the passage in general, and from the reference to the public ownership of slaves, that this was a different type of revenue altogether.

[210] See below, pp. 230, 235–6, on this difficulty.

[211] *Op. cit.* 196: not an average, for if it were, he argues that it would be low in comparison with the return on landed property, even having regard to the risks (195).

[212] See p. 236 below.

The explanation of Calhoun is much the same as that of Ardaillon, a combination of the two forms of payment of which we hear. Sums which appear in the lease lists are (360 ff.) ‘ the minimum amount which must be paid ten times a year ’. On the other hand, the maximum royalty the State might claim would be one twenty-fourth of the gross production. The minimum payment necessary to keep the concession (not unlike Schönbauer’s suggestion, see below p. 231) is, in Calhoun’s opinion, an attempt to estimate one twenty-fourth of what the concession ought to produce if worked with ordinary energy and effectiveness; it will vary according to the size of the concession and the richness of the vein. It must be objected, however, that the minimum payment, if this is so, often seems too great (see below pp. 238–9), and the percentage, as a maximum, far too small.

In fact, the one twenty-fourth is a nuisance if an attempt is made to fit it in with other probable modes of payment. For that reason the suggestion of Momigliano is a good one,[216] that the regular fourth-century system was the payment of a sum to cover the period of the lease. This sum, Momigliano maintains, was contained in one payment (*i.e.* in Dem. XXXVII 22 the καταβολή *is* the 90 minae of the ‘ purchase ’), but he does not make clear the meaning of the sums appearing in the lease lists. The one twenty-fourth, he points out, was under normal conditions too low, seeing that it is to be taken as a rent, not a tax [217]; it is not, therefore, to be related to such other evidence as we have, but ascribed to a period when the mines were in decline,[218] to replace the predetermined payment for the lease, which was the form of payment in the more prosperous period of mining activity.

Finally, Schönbauer,[219] whose position in this question of the form of payment is the least

[213] Ardaillon suggests (192) that the famous 100 talents obtained from the mines in 484 B.C. was the sum of the ‘ fermages ’ inflated to a high figure by great expectations, and collected even from those whose hopes were disappointed, rather than a proportional payment, *i.e.* a ‘ *fermage établi et peut-être même payé d’avance* ’, which ‘ *écarte toute nécessité de contrôle sur le produit brut ou net des concessions* ’. *Cf.* Schönbauer (*Beiträge* 16–17): ‘ *Dann ist es verständlich dass man mit einer festen Summe rechnete* ’. This gets rid of the difficulties which arise if the 100 talents are taken as 1/24 of the total silver produced, but raises other difficulties.

It is to be noted that Ardaillon involves himself in a contradiction, calling the 1/24 first a limit (191): ‘ *Je comprends donc que le fermage était fixé d’avance pour chaque lot de mines, entre les Polètes et le concessionaire de telle sorte qu’il ne dépassât point la vingt-quatrième partie des profits que le concessionaire espérait retirer* ’ and then a beginning for bidding (196): ‘ *Ce tarif n’est raisonnable que s’il est le point de départ des enchères.. Il était sans doute dépassé le plus souvent, grâce à l’affluence des concurrents.*’

[214] Which disposes of Boeckh’s objection (see above, p. 229), and does not contradict Dem. XXXVII 22, where the καταβολή, coming from the silver of the mine itself, would be a later payment, not the initial one.

[215] ἡ ἀπόμοιρα, ὡς μέρος τι τῶν περιγιγνομένων ἐκ τῶν μετάλλων λαμβανούσης τῆς πόλεως, ἢ ὡς διαιρουμένων εἰς πλείους μισθωτούς, ἵν’ ἕκαστος λάβῃ τι μέρος. Δείναρχος ἐν τῷ πρὸς τοὺς Λυκούργου παῖδας πολλάκις. Ardaillon claims that the figure would be such that it could be divided into several lots called ἀπονομαί. He translates μισθωτούς (tax-collection purchasers?), while reading μισθωτάς, tenants in fee-farm, which Boeckh would prefer. Ardaillon’s interpretation seems to come from Rangabé, *Laurion* 19. But it is not clear that the second element in this definition (after ἢ ὡς . . . .), whatever it means, refers also to the mines mentioned in the first.

[216] *Op. cit.* 247–58, where he also suggests direct exploitation by the State down to 483 B.C. (with periodic distributions), and the leasing of mine concessions thereafter.

[217] A sensible conclusion, though the comparison with the mines of Saxony seems quite unsound, as are his further calculations of production based on Beloch’s assessment (*Gr. Gesch.*^{2} III 1 274) of the number of slaves in the mines.

[218] *Op. cit.* 258: ‘ *trasformando il canone di pagamento in percentuale, meglio adatta alle precarie situazioni della industria mineraria ateniese da Alessandro e più della conquista romana in poi* ’.

[219] *Beiträge* 20–25, *Studien* 207–10; 193–202 contains a summary and criticism of the views of Ardaillon, Kahrstedt, Momigliano, and Calhoun.

clear, deserves some short comment. The epigraphical material available to him was less full than it is at the present, but it is not clear that he made as close a study as was necessary of what he had. At the bottom of his explanation of payments, as in the case of status and tenure of the mines, lies his theory of the ‘ freeing ’ of a state domain for private exploitation, and of a change from a system of leased concessions to some different relationship between State and individual which he does not make very clear.[220] What, then, are the sums mentioned in the lease lists if not some form of payment for a lease? One of Schönbauer's explanations is that they were registration fees (*cf.* Calhoun, above) when a mine was started. Such payments are then repeated as renewal fees.[221] But he also speaks of the payment of lump-sums [222] in a very confusing manner, and introduces further obscurity by a suggestion that the amounts recorded in the lease lists are somehow connected with the ‘ Suidas ’ one twenty-fourth—or possibly not, there being two forms of payment after all.[223] In fact, Schönbauer has not paid full attention either to the literary evidence for payments (which he hardly mentions) or to the epigraphical evidence in detail. It is an easy way out to say that there were probably diverse systems of payment.[224]

(ii) *The Evidence of the Lease Lists*

We must now turn to the lease lists, where the information, though defective, is at least contemporary and unaffected by forensic bias. As in the case of the delimitation of boundaries, so too in terminology there are differences between Crosby 1, seemingly the oldest of the *poletai* lists containing mine leases, and the rest. The mode of recording boundaries has been mentioned above (pp. 217 ff.); Crosby 1 also gives no suggestion of an established form of lease with a set formula such as appears later (though there are always variations in detail). The leases are ‘ sold ’, *e.g.* line 40: μέταλλα ἐπράθη ἐπὶ τῆς Ἱπποθωντίδος πρώτης . . ., and have a named purchaser (ὠνητής). The location is not always given in reference to particular properties, though the general location is given for what seem to be new mines. The mines do not always have a name; the leases are recorded under prytanies starting with the first (*Hippothontis*), and examples appear under all prytanies except the sixth and eighth. Five of the mines marked by higher prices [225] are recorded as τῶν ἐκ τῆς στήλης, and are therefore mines actually in being, and already worked with very varying degrees of success (see below p. 234). The stele here mentioned seems to have been a previous lease list, not a stele marking the mine.[226] All five of these mines possess names, but fewer details are given, though in this particular, too, the general later practice is not uniform. It seems reasonable to conclude from the prytany grouping that these are all the leases for the archon year 367/6 B.C. The terms *kainotomia*, (*palaion*) *anasaximon*, and *ergasimon* (discussed above pp. 201 ff. in general) do not appear in Crosby 1, though the sum (20 drs.) attached to the majority of the concessions suggests, as will be seen, either *kainotomiai* or *palaia anasaxima*, while the group of five τῶν ἐκ τῆς στήλης sound like *ergasima* to judge from later evidence. Furthermore, the verbs ἀπογράφεσθαι and εἰσφέρειν used later do not appear in this inscription; the same is true of the common later phrase ἐν τοῖς ἐδάφεσι; cf. *Hesperia* XIX (1950), 206. Ἀπογράφεσθαι appears for the first time in Crosby 2,[227] and thereafter is the most common verb relating to the leases, meaning 'registered'.[228] Εἰσφέρειν is very rare and its meaning obscure.[229] *Anasaximon* appears first in Crosby 4.[230] It may be chance that it is not forthcoming earlier, as Crosby 2 and 3 are so defective.[231] The earliest certain example of *palaion anasaximon* is in Crosby 11. 5, though it can be restored in a number of places previously.[232] *Ergasima* are relatively rare in comparison with *anasaxima* and *palaia anasaxima*,[233] *kainotomiai* are even more so. Apart from the twelve possible *kainotomiai* of Crosby 1, there are only three leases of this category [234] and three examples of *kainotomiai* as boundaries.[235] So rare is the term [236] that its absence requires some explanation over and above the defective nature of the records, *i.e.* given the haphazard nature of losses and damage [237] there should be more examples, if the *kainotomiai* stood in any close proportion to other categories. The word cannot have been replaced by some other in the earlier lease lists,[238] and it is a legitimate conclusion [239] that *kainotomiai* were rarer.

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[220] The ‘ freeing ’ is certainly not proved by Schönbauer's arguments. See above pp. 228–9. In *Beiträge* 17 he accepts ‘ *Verpachtung* ’.

[221] *Beiträge* 22, 24; *cf.* the case of the κατατομή in *IG* II^2 1582. 70, *Beiträge* 24–5: ‘ *die Grube ist noch nicht in Ertrage. Der* ὠνητής *erneuert nun sein Recht um die Arbeit fortsetzen zu können* ’. For the special case of Lysanias (*IG* II^2 1582. 76–7, 82–3), see *Beiträge* 21–2. On this question of renewal it is worth noting Schönbauer's interpretation of the terms used in ’Αθπ. and the διαγραφαί (*Beiträge* 25): ἀνασάξιμα (in the leases) is the equivalent of συγκεχωρημένα (’Αθπ. 47, 2) and represent a renewal with a different ὠνητής; ἐργάσιμον represents a renewal by the same operator, whether working continuously or intermittently. Schönbauer also makes the suggestion that the three years in ’Αθπ. for *ergasima* is not a limit of exploitation by one individual (to be followed by a re-auctioning), but a period to be followed by a registration by same operator again.

[222] ‘ *Pauschalbeträge* ’: to which he is perhaps inclined by interpreting *IG* II^2 411 with certainty as referring to a mine worked on some form of ἀπόμοιρα-system.

[223] *Studien* 209–10: ‘ *es wäre theoretisch möglich dass die genannten Gebühren die Pauschalablöse für das Vierundzwanzigstel bedeuteten. Es scheint mir aber wahrscheinlicher dass neben den an die Poleten gezahlten Beträgen eine Abgabe zu leisten war, die Suidas meint* ’.

[224] ‘ *Sehe ich dabei richtig, so dürfen wir uns also keine einheitliche starre Ordnung vorstellen* ’, *ibid.* 210.

[225] Crosby 1 (*Hesperia* X (1941), 14 ff.), ll. 47 ff., 50 f., 51 f., 61 f., 82 f.

[226] *Cf.* the distinction made in *IG* II^2 1582. 60–3: τάδε αὗτοι ἀπεγράψαντο ἐργάσιμα ἐκ τῶν στηλῶν (*i.e.* the marker stones) ἐπὶ τῆς Κεκροπίδος πρώτης | πρυτανείας ἐκ τῆς στήλης (*i.e.* the lease list) τῆς ἐπὶ Καλλιμάχο: | ἄρχο:, though an archon's name, which usually follows, is here omitted. It is much less likely that ἐκ τῆς στήλης here means the equivalent of στήλην ἔχον.

The general practice evolved after a certain period is well represented by the one complete passage of any length in a lease list later than the first, *i.e.* Crosby 16, *IG* II^2 1582. 45–83 and 85–139, which may be set out in tabular form thus: [240]

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[227] L. 3, ἀπ]εγράψατ[ο].

[228] See below pp. 237 ff. Francotte, *L'Industrie* 192, seems quite in error in supposing that ἀπεγράψατο refers to the informer against an illegal mine operator who, in Francotte's opinion, is represented by ἀπηργάζετο. This is apparently on the analogy of the confiscation sales of Crosby 16, cf. *Hesperia* V (1936), 400–3, where, however, the active ἀπέγραψεν appears to be used; *cf.* Hypereides IV (III) 34. Francotte also explains the recurring sum of 150 drs. (observing incorrectly '*ce qu'il y a de plus frappant c'est identité du prix dans le cas ou il a été conservé*') as a special cut price for the informer, who also takes over the mine.

[229] See below p. 237. It appears in Crosby 16, *IG* II^2 1582. 77, Crosby 18. 18–19, 19. 4, 37. 2. The first of these seems to be an exceptional and irregular transfer of a lease. The other cases all seem to concern *ergasima*, though *ergasima* also appear with ἀπογράφεσθαι; *cf.* Crosby 20. 7 and 18. 65 (restored).

[230] Ll. 21 and 28.

[231] Crosby 2 and 3 perhaps belong to the period after Crosby 1 but before mid-fourth century (see *Hesperia* XIX (1950), 207, 209); 4 is likely to be of much the same date. The common terminology therefore probably came in pretty soon.

[232] Crosby 5. 21; 7. 17 (*IG* II^2 1583); 8. 2, 9–10 (*IG* II^2 1584); 9. 4, 11, 18; 10. 7, 16 (*IG* II^2 1585), and idle mines seem indicated by ἠργάσατο (4. 8), ἠργηκός (5. 84), ὃ ἠργάζετο (10. 11 (*IG* II^2 1585)). See references below n. 236.

[233] (* = certain restoration; ** = less certain) Crosby 13. 4**; 13. 8*; in l. 30, if this is correctly restored, at least one *ergasimon* is likely to have followed; Crosby 16, Face A, Col. III, *IG* II^2 1582. 63–9 and 75–83 (in some way an unusual case), 69–75 (μέταλλον καὶ κατατομή) is almost certainly *ergasimon* though not thus described; Crosby 18. 17–22,* 60–4,* 65–9*; Crosby 19. 4–9,* 9–13,** 13–18**; Crosby 20. 5–13. Crosby 16, *Hesperia* V 404, l. 299, is a possible case. A total of fourteen.

[234] Crosby 32a, *IG* II^2 1587. 5–6, with a name, and one of a group seemingly apart from *anasaxima*; Crosby 38. 1 and 8, *IG* II^2 1586 (the poor copy of Fourmont).

[235] Crosby 28. 5–6: κα[ι]νοτομία ἣν ἐργάζεται, 33. 2: καινο]τομία ἣν ἀ[πεγράψατο, and 35. 3.

[236] Crosby nos. 1–20 record 83 *palaia anasaxima*, *anasaxima* and *ergasima* (fully recorded or restored) as compared with 12 *kainotomiai*, all in Crosby 1, if these belong to this category. There are also the cases where in boundaries mines are named (28) and references to previous activity are expressed by ἠργάσατο, ἠργάζετο, as contrasted with ἐργάζεται (for which *cf.* Crosby 4. 25, 20. 9, 24, 56, coupled in the last three cases with a name present or to be restored), which seems to indicate contemporary activity. The following are references to previous activity (* coupled with a mine mentioned as boundary), most of which seem pretty certain: Crosby 4. 8; 5. 84 (ἠργηκός); 10. 4, 10–11 (includes a λόφος); 13. 20 (includes a λόφος), 27,* 51, 74–5*; Crosby 16, *IG* II^2 1582. 98; 18. 7, 53–4*; 22. 10*; 32a. 8; 38. 4; some of these are coupled with the mines named as boundaries, but there are 14 others. *Cf.* for mines as boundaries: 7. 19, 21; 4. 3–4 (?2); 5. 75; 6. 1; 8. 12 and 14 (2); 10. 4 and 10–11 (2); 13. 10, 74–5 (?); 15. 47; Crosby 16, *IG* II^2 1582. 2–3 (differently read and restored by Crosby, *Hesperia* XIX (1950), 247), 1582. 17–18, Crosby *ibid.* 248, lines 65–6?; 1582. 38–9?, 43–4, 58–9 (2), 81, 120–1 (2); 20. 9, 24, 56; 32b, 1–2 (?2), 7, 11–12, but see Crosby, *Hesperia* XIX (1950), 221.

[237] See below n. 321 for the question of grouping.

[238] Only *anasaxima* might be considered, but a study of the lists shows that *anasaxima* could not be the equivalent if price is any indication. *Cf.* Crosby 16, Face A, Col. II, 50–5: 400? + drs. for a concession ἀ]νασάξιμ[ον καὶ ἐπικα]τατομ|[ήν, where the ἐπικατατομή seems to make it clear that this is no *kainotomia*. *Anasaxima* also occur with registrants as well as purchasers (see below); *cf.* Crosby 5. 48–52, 68–73, with different persons in each capacity.

[239] To be discussed below, pp. 235–6.

	Registrant.	*Lessee.*	*Category.*	*Price.*	*Location.*
45–51	Phanostratos of Gargettos [241]	Euetion of Sphettos	PAL.AN.	150 drs.	Thorikos
51–6	None	Kleonymos of Aphidnai	AN.	150 drs.	Ἐπὶ Λαυρέωι
56–60	None	Euthykrates of Kropidai	PAL.AN.	150 drs.	Ἐν Βαμβιδέωι

The above is probably the end of a section. There follows a new section headed (60–3): τάδε αὐτοὶ (' the same lessees as before '?) ἀπεγράψαντο ἐρ | γάσιμα ἐκ τῶν στηλῶν ἐπὶ τῆς Κεκροπίδος πρώτης | πρυτανείας ἐκ τῆς στήλης τῆς ἐπὶ Καλλιμάχο: | ἄρχο. Here ἐκ τῶν στηλῶν must refer to the mine markers, though not all mines had them,[242] ἐκ τῆς στήλης to the year's list of leases.

	Registrant.	*Lessee.*	*Category.*	*Price.*	*Location.*
63–9	Onetor of Melite	Onetor of Melite	ERG.	150 drs.	Ἐπὶ Λαυρέωι [243]
69–75	Menexenos of Dekeleia	Menexenos of Dekeleia	Not called ERG. but μέταλλον καὶ κατατομή (70)	150 drs.	Thorikos

A sub-heading (75–6) follows: ἐκ τῆς στήλης τῆς ἐπὶ Θεοφίλου ἄρχοντος (repeated 83).

76–83	Lysanias of Kephalai [244]	Lysanias of Kephalai	ERG.	150 drs.	Ἐπὶ Λαυρέωι

BREAK

99–106	Theodoros of Melite	Theodoros of Melite	PAL.AN.(?)	Price lost	Anaphlystos
106–12	. . . λου]| Εἰτε(αῖος)?	Same as *Registrant*	Almost cert. PAL.AN.	20 drs.	Anaphlystos
112–17	Aisimides of Gargettos	Aisimides of Gargettos	Almost cert. PAL.AN.	20 drs.?	Anaphlystos
118–23	Timokleides of Phreatto	Timokleides of Phreatto	PAL.AN.	20 drs.	Anaphlystos
123–9	Epikrates of Euonymon	Epikrates of Euonymon	AN.	20 drs.	? [245]
129–35	Eubios, son of Euenios	Eupolemos of Sounion [246]	AN.	130 drs.	Anaphlystos

It seems clear from this collection of leases that *ergasima*, *anasaxima*, and *palaia anasaxima* appear with the same registrant and lessee. In certain cases of *palaia anasaxima* and *anasaxima* no registrant is mentioned. *Anasaxima* and *palaia anasaxima* also appear with different registrant and lessee. The position of *ergasima* is not clear beyond doubt because of the limited number of such leases, and the defective state of available examples. In Crosby 16, *IG* II^2 1582. 63–9 and 69–75 [247] registrant and lessee are the same: there is renewal from an earlier stele and ἀπογράφεσθαι is used. In Crosby 18. 18–22 (ἐργάσιμον restored) and Crosby 16, *IG* II^2 1582. 76–83 registrant and lessee are not the same, and the term εἰσήνεγκε(ν) is used [248] instead of ἀπεγράψατο: [249] special circumstances are hinted at in both these cases. In 19. 13–18 Crosby restores [μέταλλον ἐργάσιμον εἰσήνεν]κε, since the *stoichedon* arrangement seems to admit it, and the lease is renewed from a former list (as in *IG* II^2 1582. 76–83), despite the fact that registrant and lessee are the same and there are no special circumstances mentioned. It is clear, therefore, that we have insufficient evidence on which to build a sure conclusion about ἐργάσιμα, or the meaning of εἰσφέρειν as opposed to ἀπογράφεσθαι, but Crosby might be justified in concluding that it signifies a change of lessee without a change of category.

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[240] R. = registrant (ἀπεγράψατο); L. = lessee (ὠνητής).

[241] Also owner of a boundary *ergasterion.*

[242] *Cf.* Crosby 19. 19–20: στήλη⟨ν⟩ οὐ|[κ ἔχον.

[243] Ἐπὶ Λαυρέωι in 63 is repeated as the location in 64; *cf.* 135 and 138 (Thorikos) for a similar repetition. Though named at the beginning of a lease these seem not to be registration centres; as Crosby suggests (*Hesperia* XIX (1950) 250), they may mark the transition from one local group to another, but other details are also repeated, *e.g.* the archon name in 75–9.

[244] Recorded as: μέταλλον εἰσήνεγκεν ἐργάσιμον from the stele of Theophilos [ε]ἰργασμένο[ν ὃ εἶχεν?]| Ἀντί[ξ]ενος Εὐω:

[245] See Crosby, *Hesperia* XIX (1950), 250–1. Crosby's conclusion doesn't follow; *cf.* lines 175 ff.

[246] Owner of an *ergasterion* on one of the boundaries.

[247] In the latter the mine is not called *ergasimon*, perhaps because of the κατατομή, but it must have been such, as renewed from another stele.

[248] Crosby 18. 60–4, 65–9; 19. 9–13; 20. 6–13 are restored on this principle, but are of no use as evidence; the position in 37. 3 is not clear.

[249] In 18. 18–22 this appears as well, apparently of an earlier lessee.

Before a synthesis is attempted, such information must be collected as is available from these inscriptions on the sums of money recorded. No example occurs of a price for what is expressly called a *kainotomia*; if the twelve leases in Crosby 1, not marked out as τῶν ἐκ τῆς στήλης, are to be regarded as such, the price is in each case given as 20 drs. This sum also appears elsewhere as that paid for *palaia anasaxima* [250] or *anasaxima*.[251] There are other examples of *palaia anasaxima* or *anasaxima* where this sum can be restored; [252] this amount can also be restored elsewhere where the type of lease is unknown. The other most common recurring sum is 150 drs., also applied alike to *palaia anasaxima*,[253] *anasaxima*,[254] and *ergasima*.[255] There are other cases where this sum might have stood originally, though the lease record is now defective.[256] In addition, there is a curious assortment of irregular figures which vary in different cases by hundreds, fifties, and tens. Most are above 150 drs.; only one is below 100 drs.[257] The reading in a fragment of Crosby 16 [258] gives a payment of 6100 drs., but little can be made of it in view of the poor state of preservation of the fragment.[259] Apart from this case there are two mines which seem to belong to a rich closely-mined area at Besa; these have prices of 2000? + drs., and 1400? + drs.[260]; their category unfortunately cannot be determined. Another mine, possibly in this group, but showing a much lower price (160 drs.), is Crosby 18. 7, described as μέταλλον] ἐμ Παγγαίωι ὃ ἠργάζ: i.e. *anasaximon*, the name of its location being significant. With these two high-priced mines go two from Crosby 1 (47–9, 51–2) at 1550 drs., both τῶν ἐκ τῆς στήλης, seemingly renewals and therefore *ergasima*, and another (Crosby 5. 6, possibly *anasaximon*) at 1210 drs. There is then a second group of leases, seven in number, at prices between 800? + drs. and 250? + drs.; [261] sadly few details are preserved, but two include ἐπικατατομαί.[262] A third group of eight contains prices from 200 drs. to 120? + drs.[263]

There remains, finally, the question of such combinations of terminology and price as we can discover—always bearing in mind the unfortunate circumstance that the state of the inscriptions brings it about that details of the type of lease are preserved together with information on the sums paid far less frequently than we would like.

(a) *Kainotomiai.* No clear information on registrant and lessee. In Crosby 1 particulars are given of twelve leases more likely to be *kainotomiai* than *palaia anasaxima*. The purchaser only is named; the price is 20 drs.

(b) *Anasaxima.* Examples occur with the same registrant and lessee at 20 drs.[264] and at

[250] Crosby 16, *Hesperia* V (1936), 398, l. 10; Crosby 16, Face A, Col. IV, *IG* II^2 1582. 123.

[251] *IG* II^2 1582. 129.

[252] Crosby 14. 9 and 21.

[253] Crosby 16, Face A, Col. III, *IG* II^2 1582. 51, 60.

[254] *IG* II^2 1582. 56.

[255] Crosby 1. 52 and 83; *IG* II^2 1582. 69, 75, 83; Crosby 18. 22; 19. 9, 13, 18; 20. 13.

[256] Crosby 2. 21; 4. 7; 5. 36, 87; 10. 6; 15. 12, 29, 66; *IG* II^2 1582. 12; Crosby 16, Face A, Col. II 60; *IG* II^2 1582. 45; Crosby 16, Face A, Col. III, *IG* II^2 1582. 36 (Crosby p. 249); Crosby 19. 37; 20. 58; 32b. 19; *anasaximon* 5. 11.

[257] Crosby 1. 62, *ergasimon* (?), 50 drs.

[258] *Hesperia* V (1936), 404, l. 299.

[259] It is not clear that this is a price (what does Φηγα: stand for?), though it is in the appropriate place. As Crosby points out, it might be the last of a group of *ergasima*. It is followed by two *palaia anasaxima*.

[260] Crosby 18. 3, 13.

[261] Crosby 20. 37 (800 drs.); 5. 15 (500 + 100? + 100?; *anasaximon*?); 3. 10 (500 drs.); 6. 8 (500 drs.); 13. 100 (500? + drs.); 16, Face A, Col. II 55 (between 400 and 500 drs.; *anasaximon*); 13. 108 (250? + drs.).

[262] Crosby 6. 5 and 16, Face A, Col. II 55.

[263] Crosby 5. 68 (200 drs.); 20. 6 (200 drs., *palaion anasaximon*?); 20. 20 (200 drs., possibly *anasaximon*); 27. 1 (170? + drs.); 18. 8 (160? + drs., *anasaximon*?); 20. 17 (160 drs., *anasaximon*); Crosby 16, Face A, Col. IV, *IG* II^2 1582. 135 (130 drs., *anasaximon*); 36. 3 (120? + drs.). 5. 68 could also be either 700 or 300 drs.

[264] *IG* II^2 1582. 123–9.

150 drs.[265] There are examples with different registrant and lessee at sums of more and less than 150 drs.[266] There is an example at 150 drs. with no registrant recorded.[267]

(c) *Ergasima.* The generally accepted principle is one of continuity. *Ergasima* occur at 150 drs. with the same registrant and lessee [268] and with different.[269] There are no clear examples of *ergasima* with higher sums and with registrant and lessee preserved, but it seems clear in Crosby 1 in the case of (μέταλλα) τῶν ἐκ τῆς στήλης that registrant and lessee were here the same, with prices of 1550 drs. (2), 150 drs. (2), and 50 drs.,[270] though no registrant is recorded.

(d) *Palaia anasaxima.* There occur examples at 20 drs. with the same registrant and lessee,[271] and at 150 drs. with different registrant and lessee.[272] There are examples with no mention of a registrant at both 20 drs. and 150 drs.[273] It is worth mentioning again that a *palaion anasaximon* (with nothing known of registrant's name) occurs at 200 drs.[274] and that a very fragmentary lease mentions a mine ἠργηκός (therefore either *anasaximon* or *palaion anasaximon*) at 150? drs.[275]

It need hardly be pointed out that, with less defective and more extensive evidence available, other combinations of price and category might appear which would clear up present obscurities (especially details of *anasaxima* with different registrant and lessee at 20 drs., different registrant and lessee at 150 drs., more examples with higher and varying prices, and details on registrant and lessee, *ergasima* with details of registrant and lessee at varying prices). It is clear, however, that there are two categories of prices, one standard and frequently recurring (20 drs. and 150 drs.) and the other variable. It follows that the fixed sum must have been determined by some authority, almost certainly the State, the varying sum by an economic process, competition for the lease produced by the quality of the mine. In this latter category it is reasonable to take the view, with Ardaillon, that an auction or something like it took place. The sums of 20 drs. for *kainotomiai* or *palaia anasaxima* may or may not have been nominal payments; this depends on the question, yet to be considered, whether they were payable once for the whole period of the lease, per year or per prytany. What practical considerations determined the sum of 20 drs., or of 150 drs., which likewise appears frequently, it is difficult to discover. It would seem fair, when a considerable risk is being taken either in starting a new mine (*kainotomia*) or in restarting an old abandoned mine,[276] that the State should claim only a small payment—whether with Schönbauer we should call the 20 drs. a ' booking ' or ' registration ' fee is difficult to decide; again it depends on what the sum of 20 drs. means. It is likely, in view of the rarity of *kainotomiai*, that this term refers to the process of sinking a shaft and opening up a new mine.[277] When the preliminaries were finished the mine was *anasaximon* and the silver-mining proper began. There must have been in general a limit in time imposed for the completion of the *kainotomia*, but if at the end of that term the preliminaries were not completed or no silver had been found, the mine, called *anasaximon*, might be continued with a payment still of 20 drs.[278] When silver was found within the period allowed for the *kainotomia*, there were four possibilities for the future: *either* the present operator continued it as *anasaximon*, if no one else was inclined to outbid him, at the charge of 150 drs.,[279] *or* (*a*) he was outbidden or outbid opposition for a larger sum,[280] or (*b*) he extended the original mine area with an ἐπικατατομή,[281] for which he had to pay more (though we have an exception [282] of either *anasaximon* or *ergasimon* and κατατομή at 150 drs.), or (*c*) he surrendered the concession, if it were not a promising one, to another, who paid something less than the 150 drs.[283] All these possibilities have to be taken into account.[284] When the term allowed for the first period of full working came to an end, it is clear that only very optimistic operators or those that had discovered a rich and abundant supply of ore would continue. So the further prolongation of the lease as *ergasimon*, for a second period of full exploitation, was limited to three years.[284a] Again the process of bidding took place: if there was no competition, the operator in possession *might* secure the renewal at 150 drs.[285]; in most cases, it may reasonably be assumed, the sum was increased for a rich mine. It just happens that we have no clear case in the surviving records, though two cases of high prices may belong to *ergasima*.[286] Finally, at any stage a mine might be abandoned for a period longer than the term for which that category of mine could be leased: in that case it became *palaion anasaximon*, which could be taken up again by the same operator at 20 drs.,[287] or by a different operator at 150 drs.[288] There is also a case of a payment of 200 drs.,[289] where the identity of registrant with lessee is unknown, and one of 150 drs., where no registrant is mentioned,[290] *i.e.* perhaps a case of the same registrant and lessee. The difference between the *palaion anasaximon* at 20 drs. and at 150 drs. was perhaps determined by the degree of restoration necessary; in the one case making the old mine comparable to a *kainotomia* needing complete development, and in the other to a *metallon anasaximon* beginning production.

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[265] *IG* II^2 1587. 17–19; 1582. 69–75 (with κατατομή; technically this might be either *ergasimon* or *anasaximon*).

[266] 130 drs. (*IG* II^2 1582. 129–35); 200 drs. (Crosby 20. 17–20; this is probably, not certainly, *anasaximon*).

[267] *IG* II^2 1582. 51–6. To judge from the practice with *ergasima*, this might be taken to mean the same registrant and lessee.

[268] *IG* II^2 1582. 63–8, 69–75 (but see above under *anasaxima*), 76–83; Crosby 19. 4–9, 9–13 (probable), 13–18 (restored); 20. 6–13 (restored).

[269] See above. This seems to be an exceptional case (18. 18–22).

[270] Crosby 1. 49 and 51, 52 and 83, and 62.

[271] Crosby 14. 15–21 (restored, no ὠνητής mentioned); Crosby 16, *Hesperia* V (1936), 398, l. 10 (restored); *IG* II^2 1582. 106–12, 118–23.

[272] *IG* II^2 1582. 45–51.

[273] Crosby 14. 3–9 (restored); *IG* II^2 1582. 56–60.

[274] Crosby 20. 2–6 (restored), purchaser, Leukios of Sounion, registrant lost.

[275] Crosby 5. 84.

[276] Care must be taken in the use of the term ' abandoned ': Crosby 14. 3–7 with no registrant might be such a case, but *IG* II^2 1582. 45–51 with different registrant and lessee can hardly be called such, unless the ' registration ' is a formal term and the name of the previous operator was got from the marker stone. For *palaia anasaxima* at 150 drs., with or without a registrant, see below p. 236.

[277] Note the appearance of a *kainotomia* as a boundary, above n. 235.

The simpler course, indicated by Crosby (*kainotomia* becoming *ergasimon* if renewed by the same operator, but becoming *anasaximon* if taken over by another), does not take sufficient account of the curious combinations of category and price which actually occur in the inscriptions. The arrangement outlined above fits the evidence as we have it at present. It explains to some degree the relative rarity of *kainotomiai* and *ergasima*, and the common occurrence of

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[278] Cf. *IG* II^2 1582. 123–9, same registrant and lessee.

[279] *IG* II^2 1587. 17–19, which must represent some form of average.

[280] Crosby 20. 17–20 (200 drs., though here (with different registrant and lessee) the type of mine is not specified); to this category probably belong the following (where we know nothing of registrant and lessee): 5. 6 (1210 drs.), 18. 3 (2000 drs.), 18. 9–13 (1400 drs.), 20. 13–17 (160 drs.), though 18. 3 and 18. 9–13 may be *ergasima*.

[281] *Cf.* probable restoration of Crosby 6. 5–8 at 500 drs., with ἐπικατατομή; also restored by Crosby in 16, Face A, Col. II 55 at 400? + drs.

[282] In *IG* II^2 1582. 69–75.

[283] Cf. *IG* II^2 1582. 129–135, different registrant and lessee at 130 drs.

[284] Where no registrant is given in *IG* II^2 1582. 51–6 (*anasaximon* at 150 drs.), the best explanation is that the lessee is to be understood; *cf.* the omission of the registrant in Crosby 1. 49, 51, 52, 83, and omission of the lessee in 14. 15–21; it is difficult to explain Crosby 1. 62, ἐκ τῆς στήλης, at 50 drs.

[284a] The case in which Mekythos or Smikythos (see above note 98) was involved in Deinarchos LXXVIII (Baiter and Sauppe II 325) may have something to do with an *ergasimon* mine and this period of three years. The speaker has 'purchased' a mine in the archonship of Euboulos (345/4) and instituted an action against Smikythos in the archonship of Nikomachos (341/40): as pointed out above, in a period of mining activity. If he purchased the mining rights in 344, a period of three years would terminate in 342, the year before the case was brought. The plaint is given as: ἐκβαλλόμενος ὑπὸ τοῦ πλησίον ἔχοντος μέταλλα. At first sight the offence might seem to be trespass by a neighbour mine operator, but the mention of the three years could also suggest that the plaintiff was outbidden by Smikythos, and sought to upset the leasing of the mine to him. Litigation between neighbours was likely enough as Crosby points out, *Hesperia* XIX (1950), 260.

[285] *Cf.* Crosby 18. 18–22, *ergasimon*, different registrant and lessee, but clearly an exceptional case.

[286] Crosby 18. 3 (2000? + drs.) and 18. 13 (1400? + drs.).

[287] Crosby 14. 15–21 (restored); *Hesperia* V (1936), 397–8, l. 10 (restored); *IG* II^2 1582. 106–12, 118–23.

[288] *IG* II^2 1582. 45–51.

[289] Crosby 20. 2–6, purchaser, Leukios of Sounion, registrant lost.

[290] *IG* II^2 1582. 56–60 and 20. 25 ff.

anasaxima and especially of *palaia anasaxima.* It offsets the advantage to the individual of initial periods of exploitation at low rent by the possibility of a change of terms in an upward direction at frequent intervals if rich and abundant ore was discovered.

The question of the length of the lease next arises. Of the period allotted to a *kainotomia* we know nothing, but it must have been of reasonable length. The period for *ergasima* we know from Ἀθπ. 47, 2, *i.e.* three years. For *anasaxima* we have some information from the lease lists, as shown by Crosby. Certain of the lists contain references to earlier lists dated by archons, from which mine leases are renewed. Unfortunately no securely dated list contains any of these references. Crosby 16, however, contains, in addition to mine leases (including some renewed from previous lists), a series of sales of confiscated property, and there is good reason for believing that by them the list as a whole is to be dated to 342/1 B.C.[291] An earlier date seems precluded, a date more than two or three years later is highly improbable: its date, therefore, if not 342/1 B.C., is likely to be 341/40 or 339/38 B.C. In the list of mine leases occurs a group of two *ergasima* (see above p. 234) renewed (ἀπογράφεσθαι) from the stele of Kallimachos (349/8 B.C.).[292] This gives a period from the last registration of seven, eight, or ten years as the length of the lease of a *metallon anasaximon.* In Crosby 19. 4 the verb εἰσήνενκε (which Crosby [293] connects with a change in lessee but not in category) appears with *ergasima* again, renewed from the stele of the archon Sosigenes (342/1 B.C.). This, Crosby suggests, is the renewal of a mine as *ergasimon* for a second time; [294] therefore the calculation of three years forward from 342/1 B.C. (archonship of Sosigenes, the first renewal as *ergasimon*) gives 339/8 B.C. as the date of the inscription. If from 339/8 B.C. we work back seven years, we get 346/5 B.C., the year of Archias, and if Archias is restored in a third lease renewal where a change of category is indicated by the use of ἀπεγρ[άψατο] (not εἰσήνενκε), *i.e.* if we accept (from Crosby 16) a seven-year period for *anasaxima* renewed to become *ergasima*, the name fits the *stoichedon* line (as *e.g.* Kallimachos, 349/8 B.C., representing a ten-year period, does not). These admirable suggestions of Crosby carry great conviction, though we lack the material for an independent check.[295] If *anasaxima* were leased for seven years, it is reasonable to suppose that a similar period applied to *palaia anasaxima* and *kainotomiai*, where the risk was greater. There might be a temptation to claim that *kainotomiai* were not subject to a charge, this becoming due only when a mine was in production and registered as *anasaximon* (see above p. 235) This would mean that the period of preliminary search might be shorter than seven years; it would certainly explain why references to *kainotomiai* are so rare, but while the 20 dr. mines in Crosby 1 might be explained away as *palaia anasaxima* on this theory, there appear to be other listed examples,[296] and why list them, unless a charge was made? It thus seems better to suppose a seven-year period for *kainotomiai*, seven years for *anasaxima*, three years for *ergasima*, and seven years for *palaia anasaxima.*

There is finally the question of the length of the period for which these recorded payments were made. Are they one payment for the whole term of the lease, yearly payments, or prytany payments? [297]

The listing of mines under prytanies in Crosby 1 suggests a payment in each prytany (see above p. 226), a system not confined to the mines. Even if the leases do not in all cases appear under prytany headings in the lease lists,[298] they would so appear in the less permanent records which certainly lie behind the inscriptions.[299] Prytany payments would also be less burdensome for the lessee and safer for the State.[300] One payment per year was also a custom in certain cases (ʼΑθπολ. 47, 3), and there is no administrative reason for choosing between yearly and prytany payments, though one or the other is more likely than any other of the systems adopted especially in leases of sacred or private property.[301] The revenues which would be received in each case may throw light on the question. Miss Crosby calculates (from Crosby 1) that in 367/6 B.C., on the basis of a single payment for the period of the lease, the State would receive only 3,690 drachmae, on annual payment 2 talents, on prytany payment 20 talents; in 342/1 B.C. (from Crosby 16), on Crosby's estimate of the number of leases, the sum would be 3 talents if a single payment, 16 talents if annual, and 160 talents if in each prytany. One cannot be altogether happy about the basis of the calculations,[302] but they show the relative financial importance to Athens of each basis of payment. Miss Crosby opts for the yearly payment, influenced by the silence of Xenophon (in the *Vectigalia*) on the subject of the state revenue from the mines: for the silence of Xenophon ' is more easily understood if the income from the leases is relatively small, as would be the case if the prices represent either lump sums or annual payments '. It is not a problem that is easy to solve. It is indeed surprising that Xenophon says nothing of the revenue from mine leases, but it might be urged that he would regard an increase in revenue as a natural consequence of the increase of mining, through more prospecting and an increased supply of slaves, and he is really intent to discover *new* ways of gaining revenue from the mines. On the other hand it is also clear that the State did regard the mine revenues as important, witness the regulations directed against unregistered mines.

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[291] See Crosby, *Hesperia* V (1936), 409, 412.

[292] The other *ergasimon* lease renewed (here εἰσήνενκε) from the year 348/7 B.C. is an irregular case, as noted above, and may be neglected here.

[293] *Hesperia* XIX (1950), 201.

[294] Therefore no change in category. It is a little odd that the price remained at 150 drs.

[295] That provided by Crosby 13 (see *Hesperia* XIX (1950), 233) is insufficient for such a test.

[296] Crosby 32a = *IG* II² 1587. 5–6 and Crosby 38. 1 and 8 = *IG* II² 1586; in Crosby 38 both are restored, but it is not easy to dispose of the case in 32a.

[297] For the difficulties arising from the lexicographers' evidence see above, pp. 224–5.

If annual payments were the rule, then, on any showing, 20 drs. per *kainotomia* per year and 150 drs. per *anasaximon* per year, to take the standard sums in the leases, would be ridiculously small, especially in view of the long period of exploitation. On the basis of prytany payments 2 minae yearly for *kainotomiai* and *palaia anasaxima*, and 15 minae yearly for *anasaxima* are not over great, if any measure of success in mining is attained. As we have seen above, we should not be misled by the 1/24 of the ' Suidas ' lexicon. One-tenth would represent a fair payment, and this would not presuppose an enormous total output by the lessee: an average of 20 minae and 150 minae, which are modest enough. Certain fairly large sums appear in the lease lists.[303] If these also are prytany payments, is it to be understood that the total production from such mines was enormous? Here again the ' Suidas ' lexicon tempts us to multiply by twenty four, but very successful *anasaxima* and *ergasima* would be subject to high renewal prices giving the State a larger share of the profit, or if, after the fashion suggested by Calhoun,[304] 150 drs. was only the basic price laid down by the State, competition through the great expectations of rival bidders could force up the price even beyond what was economically profitable.[305] In this way the sum payable to the State on these more expensive mines may represent a considerable, and indeed excessive, share of the profit.

The calculation on the basis of prytany payments fits well enough the instances of mine prices from literary sources: in Dem. XXXVII 22 (in a document generally accepted as reliable) a mine is ‘ purchased ’ for 90 minae: if this is *ergasimon* for three years, it represents 3000 drs. per year, 300 drs. per prytany, less than half this if *anasaximon*. If the case in (Dem.) XLII 3 is really one of a leased mine (and not rather an illegal venture) the position is similar. The speaker says he has to pay three talents as a double payment(?) for three shares. This is likely to be a year's defaulting, and one talent 30 minae may be taken to represent payment due on three shares, *i.e.* 3000 drs. per share for the year, that is 300 drs. per prytany. In the third case, Dem. XL 52, the 2000 drs. borrowed for the purchase of mines must in any case, in view of the plural ‘ mines ’, represent pretty modest payments.

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[298] See Crosby, *Hesperia* XIX (1950), 192. Prytany payments would make it easier to lease a mine at any time in the year.

[299] *Cf.* ʼΑθπ. 47, 4 and *ATL* III 15; for the καταβολή see above (p. 226) on Dem. XXXVII 22, and *cf.* (Dem.) LIX 27: ἐωνημένος τὴν πεντηκοστὴν τοῦ σίτου ἐν εἰρήνῃ, καὶ δέον αὐτὸν καταβάλλειν τὰς καταβολὰς εἰς τὸ βουλευτήριον κατὰ πρυτανείαν . . . . . .

[300] For defaulters on prytany payments, cf. *Hesperia* V (1936), 401, ll. 123–45.

[301] *IG* II² 2496–8 (twice a year), 2500 (four times a year).

[302] See Crosby, *Hesperia* XIX (1950), 203, n. 46.

[303] See above, p. 234.

[304] See above, p. 230; see also *Hesperia* XIX (1950), 202.

[305] See above, p. 230, n. 213 on Ardaillon's view of what happened in 484 B.C.

Finally, the view that prytany payments are to be postulated because they represent a sizeable addition to the revenue is especially justified in the period of considerable mining activity *c.* 350/49–341/40 B.C., when in 342/1 B.C. on Crosby's calculation 160 talents came to the public revenues from the mines. This period of great activity followed (as will be seen below) on the troubles of the Social War (357–55 B.C.), and if the writer of (Dem.) X 37–8 is to be believed,[306] the revenues were increased from 130 talents to 400 talents,[307] an increase in which the revenues from the mines must have played a considerable part, for the increase was not from taxation: . . . . . ἡ τύχη καλῶς ποιοῦσα πολλὰ πεποίηκε τὰ κοινά . . . . οὐδενὸς οὐδὲν ȝημιουμένου τῶν τὰς οὐσίας ἐχόντων, ἀλλὰ καὶ προσλαμβάνοντος . . . .[308]

III. Prosopographical Study of the Leases

Among the most interesting questions connected with the mines are those concerned with personalities. Do the same individuals reappear in considerable numbers of cases or not? Do the same persons who own the land also operate the mines? To whom do the *ergasteria* belong? What is the economic and social standing of mine operators and those named as owners of land and other property?

It is natural to start from Crosby 1. In general a considerable number of the persons here named in one capacity or the other appear elsewhere; but, as pointed out above,[309] of thirteen lessees named, only one, Pheidippos of Pithos, appears again,[310] but there are family connections with later lists.[311] Only one owner of property here mentioned, Epicrates of Pallene, certainly appears later as a mine lessee, but here again in other cases family connections in the next generation appear as mine operators. In part the individuals named in Crosby 1 fail to reappear because of the fragmentary character of the next few lists (so, for example, Thrasylochos of Anagyrous appears in Crosby 1, but not his brother Meidias), but in some cases it is a matter of the time gap. In any case out of the twenty or twenty two owners of property three are certainly, and seven probably, mentioned in later mine boundaries;[312] there are also examples of family connections. It must be borne in mind, too, that not all the sites leased in Crosby 1 would necessarily be worth renewing.

A factor to be taken into account is the uncertain date of some of the later lists,[313] and the fact that to discover repetitions of the same mine lessees *and* the same mine we should need to recover the lists of the date exactly corresponding to the seven- or three-year intervals. It would require two seven-year periods to take the mine operators of 367/6 B.C. down to 353/2 B.C., the approximate date of Crosby 5 (a substantial though fragmentary list with 20 leases), and another ten years to reach the largest surviving list of 342/1 B.C. If we work back from the list of 342/1 B.C. (Crosby 16), the period of seven years gives 349/8 B.C. and of fourteen 356/5 B.C., both periods with fairly lengthy lists (Crosby 13 and 5 respectively), but here again the list of persons appearing more than once is small, and this is true of *ergasima* with a three-year interval as well as of *anasaxima*. At first sight there is a temptation to explain this small number of recurring names by the relatively large numbers of *palaia anasaxima* and *anasaxima*, if these represent mines developed by one individual and resumed by another. It is true that the renewal of a *palaion anasaximon* by its original lessee implies two appearances by the same person, but in general the material is not available to test such suggestions, for[314] of an estimated total of 238 leases only 111 (and seventeen from Crosby 1, namely five *ergasima* and twelve *kainotomiai*, if these are correctly described thus) can be classified, and in only a very limited number of these is it known whether registrant and lessee are the same or different persons: if they are in fact different, then the impression given by the paucity of recurring names would be strengthened. In the relatively few cases where registrant and lessee *are* given, they are more or less equally divided between the alternatives. The defective nature of the details preserved (or indeed originally given) is also apparent from the relative numbers of registrants and lessees: registrants[315] are named less frequently or lost more frequently (68 (48)) than lessees (112 (86)), though this is due in part to breaks in the operation of mines or incomplete details given in the leases.

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[306] On this problem, see Andreades, *History of Greek Public Finance* 353 and n. 9, 354, where Andreades points out that Theopompos quoted by Didymos seems to confirm (Dem.) X.

[307] See also Xenophon, *Vect.* V 12.

[308] This cannot apply to the supposed great increase under Lycurgus, for which, however, the evidence is less good. See below n. 379.

[309] P. 214.

[310] See note 102 above.

[311] See note 103 above and the prosopographical list below.

[312] See note 105 above.

[313] No. 2 ‘ not much later than 367/6 B.C.’ and no. 3 ‘ before mid-fourth century ’.

It is with such a warning that an analysis of the material available is given. Out of *c.* 146 names of registrants and lessees (including fragmentary names) 101 appear once only, in the sense that they are not even represented again by members of the same family.[316] Among these single appearances are important figures of fourth-century Athens,[317] and a considerable number of trierarchic status.[318] A limited number of individuals appear twice as registrants and lessees,[319] a very few more than twice.

[314] See *Hesperia* XIX (1950), 286–92.

[315] Figures in parentheses here and elsewhere indicate certain cases or those restored with reasonable probability.

[316] Twenty seven of these are restorations. Divided by groups of leases which seem to go together they are: nos. 1–3: 8 (+9 restored); nos. 4–12: 18 (+9 restored); nos. 13–15: 6 (+6 restored); nos. 16–28: 32 (+9 restored); nos. 29–38: 10 (+1 restored); there are nine cases where it is doubtful whether the individual appears again or not; six persons (4 doubtful) appear again in boundary details.

[317] Aleximachos (*PA* 545); Diopeithes (*PA* 4329), trierarch 325/4 B.C.; Diotimos of Acharnai, father, choregos in early fourth century, see *Hesperia* XIX 218 for other possible connections; Diphilos of Gargettos (*PA* 4477), choregos beginning fourth century; Euetion (*PA* 5463), *diaitetes* 329/8, trierarch? 323 B.C.; Hippiskos (*PA* 7607), trierarch 356/5 B.C., son Aischylos (*PA* 450), trierarch 323/2 B.C.; Kallias of Lamptrai (*PA* 7873), trierarch? 353/2 B.C.; Kallikrates (*PA* 7966); Kallimedon (*PA* 8032; see also *PA* 179 Agyrrhios; K. purchases a mine near (?) the Diphileion (*IG* II^2 1587. 12), frequently taken to be the mine of Diphilos confiscated by Lycurgus); Hypereides can also be restored as a lessee: Ὑπερείδη[ς Γλαυκίππου Κολλυτ(εύς) (*IG* II^2 1585. 12–13); Mnesistratos (*PA* 10368/9, see 10337); Onetor, related to the trierarchic family of *PA* 11471–3; Polyeuktos (*PA* 11950); Theodoros (*PA* 6861), see *Hesperia* XIX 269 (and on Ekphantides or Euphantides, Crosby 21. 11 and 17), priest of Zeus Phratrios 396/5 B.C.

[318] This, in view of the long series of naval accounts available (*IG* II^2 1604–32, 377/6 to 323/2 B.C., but note the gap between 1610 and 1611, *i.e.* between *c.* 370 B.C. and 357/6 B.C.), is not merely due to the coincidence of these lists with the longest of the lease lists.

[319] Epikrates of Euonymon (*PA* 4891), *IG* II^2 1582. 123, 129, Crosby 20. 19–20 (restored); Eudraon of Thorikos (*Hesperia*, Suppl. I 31, *PA* 5444), trierarch 342/1, and *c.* 323 B.C., Crosby 5. 52–3, 20. 17 (restored), 20. 19*; Euthydikos of Sphettos, *IG* II^2 1585. 4–5, Crosby 18. 20–1; Euthykrates II of Amphitrope (*PA* 5599), trierarch 334/3 B.C., see *PA* 2419 (Archestratos I), Crosby 18. 3 and 19. 31 (both restored), the same man(?) owner of an *ergasterion* *IG* II^2 1582. 73*; Euthykrates of Kropidai, *IG* II^2 1582. 59–60, Crosby 18. 65; Leukios of Sounion (*PA* 9057, see *Hesperia* X 288), 16 *a* + *b* = Face A, Col. II 70 (restored and dubious), Crosby 20. 5–6 (restored), property, Crosby 1. 46, 80, 5. 5*; son of Theokles, one of the heroes of Phyle? (*Hesperia* II 155 and X 284 ff.), he appears in liturgy list not earlier than 330 B.C. (*IG* II^2 417), and gave an agora to his deme about mid-fourth century (*IG* II^2 1180); Lysanias of Kephale, *IG* II^2 1582. 76–7, 82–3, Crosby 13. 46–7 (restored and dubious); Telesarchos of Aixone, Crosby 1. 50, 3. 12 (restored); Theodoros of Melite, trierarch *IG* II^2 1609. 111 (not after 370/69 B.C.), 1582. 99, 106, Crosby 5. 79–80 (restored and dubious); - -]ώρο Πόρι(ος), 5. 73, 18. 22 (restored and dubious). In a rather different category is Dropides of Aphidna, Crosby 19. 22 and *IG* II^2 2636. There are certain dubious cases of identification, where patronymic and demotic are lacking: Hagnotheos, *IG* II^2 1587. 4 and Crosby 13. 63; Androkles, Crosby 18. 5 and 18. 22; Antimachos, Crosby 4. 8 (restored), *IG* II^2 1584. 8; Timokles, Crosby 23. 2 and *IG* II^2 1582. 135. * indicates owner of property.

The same caution is needed when attention is directed to the owners of land or other property in the mining region, as represented by the holders of '*edaphe*' and boundary property in the leases. The total of owners of property (houses and land, but excluding *ergasteria*) whose names are mentioned in the leases is 127 (90),[320] *ergasterion* owners 46 (43), owners of other establishments (κάμινοι) 5 (3). The majority of property owners (including *ergasterion* owners) appear once only—a pretty clear indication that much has been lost, since where the supply of ore was good and mines were close together it might be expected that the same properties would appear frequently in adjacent leases in such areas. That there were such areas is clear,[321] and it is possible to distinguish some adjacent mines (over and above those which appear in boundaries), but they are not very numerous.[322]

Among the property owners, as in the case of single registrants and lessees, appear persons of importance and standing.[323] Relatively few appear twice,[324] and only isolated individuals more frequently.[325] The apparent relationship of property owning and mining activity is interesting. Only *c.* 7 property owners appear as registrants, and *c.* 13 as lessees. Property owners who are also *ergasterion* owners number *c.* 15. There are only three cases where mine registrants or lessees are clearly stated in the lease to be operating in their own land. Certain curious cases are revealed: in Crosby 1 Kephisodotos of Aithalidai leases a mine at Besa extending from his own property into that of his neighbour Kallias of Lamptrai (see above pp. 221–2), who, however, appears to mine elsewhere. Kallias of Sphettos owns land in Nape on the borders of a rich mine, but leases two mines on land unspecified, though in the same region, in one case bordered on the west by land of Nikias of Kydantidai, in the other surrounded by it.[326] There may be certain other cases where land is owned in one region and mines worked by its owner are located elsewhere.[327] No doubt there were special reasons for such cases.

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[320] Fewer than might be expected in comparison with the registrants and lessees, but it should be noted that the number of boundaries named is most frequently less than four, and natural features and roads commonly appear for at least one boundary; also the owner of the '*edaphe*' in which the mine is situated is frequently unnamed.

[321] *Cf.* groups of mines, *IG* II^2 1582. 140–87, ἐπὶ Θρασύμωι; Crosby 18. 4–39 at Besa, 45–69 at Amphitrope (in part corresponding, as in sections of 1582, to a deme grouping); 19. 6–18 at Thorikos, 19. 18 ff. at Maroneia; *cf.* the appearance of Nape (1. 41, 47 ff., 57, 63, 67, 79: one of these mines (47) is 'sold' at a high price, the others may well be close together, and, it may be suggested, opened in view of the success of the Poseidoniakon (47); the name Nape occurs again only in 20. 8 and 10) and Pangaion. For Maroneia, *cf.* 1. 59, 19. 23–4 (property owned by Nikeratos); note that Nikias owns property at Nape, 1. 41–2: in the same area? The very fragmentary reference to Maroneia and Pangaion in 2. 17–18 also connects Maroneia and Besa through 18. 6–7, where in a group of rich mines Pangaion and Besa are clearly associated. The appearance of Maroneia and Pangaion in the mine leases in an important area recalls the opening of the 'Maroneia vein' (Ἀθπ. 22, 7) and the public profit accruing in 484/3 B.C. Pangaion in S.E. Attica might indeed represent a survival of the name from the time of Peisistratos (Ἀθπ. 15, 2, Hdt. I 64), but hardly Maroneia. It may be suggested that the 'Maroneia vein' was discovered and developed as a sequel to the advance of Persia into Thrace either in the period of Hippias (*cf.* Ure, *Origins of Tyranny* 59; the advance might account for Hippias' financial difficulties, Ps.-Aristotle, *Oeconomica* II 1347a, Ure, *ibid.* 63–4) or prior to Marathon, in either case leading to the flight of Greeks experienced in mining from the Thracian region (*cf.* the later Thracian Sosias, below n. 342) and the increased development of Laurion. If the Siphnian mines became unworkable at much the same time, there would be an additional incentive to development at Laurion.

[322] Can we conclude, without a close topographical study, that mining went on over a considerable area, and was intensively conducted only in a few places, as *e.g.* Besa and Maroneia?

[323] Epikrates of Pallene (*PA* 4909), Delian amphiktyon 377/6–374/3 B.C., trierarch *c.* 342 B.C.: or father and son, see above n. 113; Euthykrates of Amphitrope (*PA* 5596); Kallaischros of Siphnos (? *PA* 7754, see Dem. XXI 157); Kallias of Alopeke (*Hesperia* XII 19, n. 35); Lysikrates of Kikynna (*PA* 9461), choregos 335/4, trierarch 325/4 B.C.; see also his father *PA* 9395.

[324] Aischines of Thorikos, *IG* II^2 1582. 73–4, Crosby 19. 17–18 (restored); Charmylos, Crosby 1. 45, 68, 79, 5. 4–5; Diophanes of Sounion, Crosby 1. 59, 13. 68: see *Hesperia* XIX 235 for possible relations; Epameinon of Thorikos, *IG* II^2 1587. 18, Crosby 28. 1, 6–7; Nikeratos of Kydantidai (*PA* 10742), Crosby 19. 24, 26, 15. 46; Philinos, Crosby 14. 2, *IG* II^2 1582. 47, 50; Smikythos of Thorikos, Crosby 9. 13, 20. 50. Less certain, Autophantos of Kytherron, Crosby 14. 5 and 7, 5. 55, 56–7 (less certain, restoration from no. 14); Epizelos of Phrearrhioi, Crosby 5. 75 and 79, 21. 14 (restored and dubious); Exopios, Crosby 1. 43–4, 62, 28. 10–11 (restored and dubious); Nikias of Thorikos, Crosby 9. 12, 20. 49 (restored and conjectural); Philokrates of Euonymon, Crosby 5. 78, 18. 21 (restored and dubious); Pyrrhakos of Aigilia, Crosby 1. 80, 5. 5 (restored and conjectural; Teleson of Sounion, Crosby 1. 69, 70, 20. 11 (restored and dubious). There are certain cases where, from lack of patronymic and demotic, identification is not possible: Andrios, Crosby 5. 71 and 85; Demophilos, Crosby 1. 66–7, 5. 45, *IG* II^2 1588. 6; Epikrates, *IG* II^2 1582. 143–4, Crosby 20. 11; Euthykrates (see *Hesperia* XIX 260), *IG* II^2 1582. 73, Crosby 19. 12, 12–13; Konon, Crosby 11. 8, *IG* II^2 1582. 58, 133, 1587. 14, Crosby 13. 89. Konon, son of Timotheos, appears as trierarch *IG* II^2 1624. 43 (336/5–331/0 B.C.); Lysikrates, *IG* II^2 1584. 11, Crosby 5. 49; Nikeratos, Crosby 15. 15, 16b = *Hesperia* V 397, no. 10, 1–2, genitive incorrectly restored as Νικη[ράτους; Nikias of Kydantidai (*PA* 10809, *Hesperia* IV 167, X 26), Crosby 1. 41–2, 58, 64–5, *IG* II^2 1584. 5; Timesios, Crosby 1. 57, 14. 11.

[325] Antisthenes of Kytherron (*PA* 1196, *Hesperia* XI 304), and Diokles of Sounion.

A superficial examination of the evidence, given the figures set out above, would seem to indicate that there was a clear division between landowners and *ergasterion* owners as opposed to mine operators. In fact, there is no such division of a clear-cut sort, though there may have been a tendency that way, for closer inspection indicates that in a number of cases the mine operator, where no separate individual is named as owner of the '*edaphe*', is mining in his own land, as is indicated by his owning land or an *ergasterion* on the boundaries of the mine (see above p. 221). Above all, the family activities, of especially active and prominent individuals and their sons, combining land owning, *ergasterion* owning and mining, show that the division is not a very real one. The functions of land owning and mining, and mining and ore refining are sometimes complementary in a family.[328] The details here following show these activities clearly, as well as most aspects of the problems connected with the leases.[329]

RELATED INDIVIDUALS IN THE MINE LEASES[330]

A. Mining only.

PHILINOS OF SOUNION (*Hesperia* VII 4, no. 1, l. 73), lessee in Nape, 1. 60; possible owner of workshop and property 14. 2 and *IG* II² 1582. 47, 50. Possible father of the AMEINIAS (appearing (*Hesperia* VII 4, no. 1, l. 73) in the decree of the Salaminioi, 363/2 B.C.), who is lessee 5. 43–4 (location not known).

EPIKLES OF SPHETTOS, lessee 1. 71. Son (name lost) lessee 5. 36.

KEPHISODOROS OF ATHMONON, lessee 9. 9. Son EUPHEMIDES, registrant and lessee *IG* II² 1587. 17, 19.

ISANDROS OF SYPALETTOS, registrant and lessee *IG* II² 1582. 92–3, 98–9. Son STRATOKLES lessee 18. 17–18.

B. Property only.

DEMOSTRATOS (I) OF KYTHERRON, owner of furnace 1. 54. ASPETOS (*PA* 2638), property owner 15. 21; owner of workshop *IG* II² 1582. 55 (not quite certain?). DEMOSTRATOS (II) (*PA* 3623), trierarch 325/4, 323/2, *c.* 323/2 B.C. See *Hesperia* VII 292, and Crosby's comment on 15. 21. The relation of Demostratos (I) and Aspetos is not absolutely certain.

KALLAISCHROS (OF SIPHNOS). One of this name (*PA* 7754) appears in Dem. XXI 157 as one of the richest men in Athens, and served as trierarch *c.* 370 B.C. (*IG* II² 1609. 27). His son STESILEIDES served as trierarch 334/3 B.C. (1623. 204, 268). These may be the same as Kallaischros Σ[ιφν: of 20. 3, owner of '*edaphe*', and Stesileides, the owner of a workshop, and boundary land 20. 4, 5 to a mine leased by Leukios of Sounion. Stesileides is dubiously restored in 25. 29 as owner of a plot of land, as in 20. Crosby suggests (*Hesperia* XIX 265) that one or the other is to be restored as registrant in 5. 2 (property of Leukios of Sounion on boundary), and property owner in 15. 10. Others of the name of Kallaischros (*PA* 7755 and 7756), who seem to have been businessmen, may be the same person.

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[326] In one instance bordered on the west by land of Nikias of Kydantidai, in the other surrounded by it. The owner of the '*edaphe*' is not mentioned. Do we infer that it was Nikias or Kallias? In any case we have a curious example of the marking out of a mine comparable to those examples where *either* a mine is in the '*edaphe*' of the lessee, whose land is also named as a boundary, *or* an *ergasterion* of the lessee is named as a boundary, presumably on land of his. See above pp. 221–2.

[327] *Cf.* Kallaischros of Siphnos (*Hesperia* XIX 265), Phanostratos of Gargettos (to judge from his workshop boundary), Pheidippos of Pithos.

[328] Diokles of Pithos is property owner and father of Diochares, property owner, registrant and lessee. Diophanes of Gargettos is owner of an *ergasterion* and father of Aisimides (?), registrant and lessee.

[329] To the principal section, relating to land-owning *and* mining, are added those family instances of either one or the other, and cases where families seem to be represented in literature and in the leases.

[330] References to Crosby's list in *Hesperia* XIX, thus: 13. 5, and to *IG* II².

Lysitheides (I) of Kikynna (*PA* 9395). According to Demosthenes XXI 157 (if the reference is to this person) he was one of the richest Athenians. His son Lysicrates (*PA* 9461) was choregos 335/4, trierarch 325/4 B.C. The grandson was Lysitheides (II) (*PA* 9396). Lysitheides I is owner of '*edaphe*' 19. 6, and of border property 19. 7; so too in 20. 27 (restored from 19; apparently close together as restored). Owner of '*edaphe*' (restored) and border to it at Thorikos (?) 6. 10; in 14. 5–6, at Maroneia (?), restored as owner of border property; in 5. 55, at Maroneia (?) similarly restored, on the basis of 14. 5–6. 'Children' of Lysitheides I appear as owners of '*edaphe*' and border property at Thorikos (?), 29. 4, 7. There is a chronological difficulty here (see above n. 113).

Nikias (II) of Kydantidai (*PA* 10809, *Hesperia* IV 167, X 26). Grandson of Nikias I, the general, and son of Nikeratos II (put to death 404 B.C.), by whom he was left 14 talents. Property owner 1. 41–2, 58, 64–5. A Nikias also appears *IG* II^2 1584. 5 as an *ergasterion* owner. Nikeratos III, son of the foregoing, is owner of '*edaphe*' and boundary land (?) in Maroneia (*cf.* Nikias II's property in Nape), 19. 24, 26, and at Anaphlystos (?), 15. 46, bordering on a mine. A Nikeratos is restored as a property owner 15. 15, and as an *ergasterion* owner 16b, *Hesperia* V 397, no. 10, 1–2.

C. Mining and property-owning.

Diokles of Pithos (*PA* 4048, *Hesperia* IV 167). A prominent Athenian, owner of property 1. 48–9, 58 (both in Nape, the first near a rich mine). His son Diochares was property owner ἐπὶ Σουνίῳ? 14. 19, and also owned boundary property at Besa (?) 15. 25. Registrant and lessee of a mine 14. 15–16, and owned property on its northern boundary. Possessor of a mine 15. 28–9 (where his name is completely restored), and owner of property on its northern boundary. Both very close to each other (see Crosby, *loc. cit.* 238)? Diokles served as trierarch 377/6 (*IG* II^2 1604. 91, and between 377/6 and 369 B.C. (1609. 118). He was a victorious choregos (Dem. XXI 62); his wife presided at a celebration of the Thesmophoria (Isaeus VIII 19).

Diopeithes of Euonymon (*PA* 4317). Trierarch before 369 B.C. (*IG* II^2 1609. 78). Owner of property ἐπὶ Λαυρείῳ, land to the north (1. 53–4), and an *ergasterion* to the south (1. 55) of a mine; therefore owner of land on both sides? In 1. 78 he is owner of land ἐπὶ Θρασύμῳ. His son Diotimos (*PA* 4384) is registrant and lessee of a mine 26. 1–2, 6–7 almost wholly restored: boundaries and '*edaphe*' all but lost, but an *ergasterion* of Diotimos appears as a boundary, 26. 5. *IG* II^2 1582. 65–6, mine ἐπὶ Λαυρείῳ, with an *ergasterion* of Diotimos on the south, and a *peribolos* belonging to him on the north. Probably the same mine with the same boundaries as 1. 53–4 above. (Originally a *kainotomia* (?) at 20 drs., afterwards *ergasimon* at 150 drs.) The name Diotimos also occurs without patronymic or demotic in 4. 12, as *ergasterion* owner, as also in *IG* II^2 1582. 103–4, and as registrant (restored) 3. 10.

Diophanes of Gargettos (*PA* 4407). Owner of *ergasterion* ἐπὶ Θρασύμῳ on mine boundary in 16 $a + b$ = Face A Col. II 73–4 (restored); in 14. 8 (with restored demotic) owner of boundary *ergasterion* at Maroneia (restored), a mine with two *ergasterion* boundaries. His son Aisimides (demotic restored) is registrant and lessee of a mine at Anaphlystos, *IG* II^2 1582. 112, 117. The name Diophanes (without patronymic or demotic) appears in 11. 4 as registrant of a mine.

Pheidippos of Pithos (*PA* 14164), son of Phayllos (*PA* 14129). Owner of a mine ἐπὶ Σουνίῳ in the property of the children of Charmylos 1. 46–7, and of another 1. 81 at Nape, also in the land of the children of Charmylos, therefore in the same area? They were certainly near each other, since the property of Leukios of Sounion lay on the boundary of each. 13. 102–3 registrant of mine (restored), no indication of position. 15. 42 registrant of a mine (restored) at Anaphlystos (?) in Pheidippos' own property (?), with his own property as a boundary, 15. 45, therefore somewhere in the region of Diphilos' '*edaphe*' at Anaphlystos (see below)? 18. 70 registrant (patronymic and demotic restored) of a mine at Thorikos, with his own *ergasterion* (restored) as boundary, 18. 72. 20. 25 purchaser of a mine at Thorikos (?) in the *edaphe* of a member of the deme of Gargettos (neither Aisimides nor Diophanes will fit . . . . .^{10}. . . . .|. . . υς Γαργηττί :). 20. 28 owner of land on the boundary of a mine in the *edaphe* of Phanostratos of Gargettos (doubtfully restored). 19. 8 owner of an *ergasterion* at Thorikos, which may be the same as 18. 72. *IG* II^2 1582. 43 (as restored by Crosby, *Hesperia* XIX 249), holder of boundary property on the bounds of two mines. His son Diphilos (*PA* 4485). His name, where it appears, is for the greater part restored. Registrant and lessee ἐπὶ Σουνίῳ in the '*edaphe*' of Euangelos, 13, 64. *IG* II^2 1582. 125–6, owner of '*edaphe*' at Anaphlystos, and of an *ergasterion* (on his own land?). Phayllos (II), son of Pheidippos, might be restored as registrant and operator of a mine (Crosby 13. 64, see *Hesperia* XIX 235). The Diphilos charged by Lycurgus may belong to this family (see Crosby, *Hesperia* XIX 258); he is often connected with the Diphileion possibly purchased by Kallimedon (*PA* 8032). For a discussion of Pheidippos, see Crosby, *loc. cit.* 234–5.

Pherekles of Themakos. 19. 16 owner of '*edaphe*' at Thorikos. Son Diodoros (*ibid.*) registrant and lessee (restored) of a mine in his father's '*edaphe*'. Crosby (*loc. cit.* 262) suggests they were probably grandson and great grandson of the Pherekles of Themakos, in whose house the mysteries were celebrated in 415 B.C. (*PA* 14191).

Thrasylochos of Anagyrous (*PA* 7347, *Hesperia* V 398–9). Lessee 1. 49, 51–2, of a rich *ergasimon* mine, and of another of less value: the former in the '*edaphe*' of Alypetos and bordering on the land of Kallias of Sphettos and Diokles of Pithos. Brother Meidias (*PA* 9719), property owner *IG* II^2 1582. 44, 82, both ἐπὶ Σουνίῳ, the first adjacent to two mines. 15. 76 quite uncertain. For the wealth of the brothers, *cf.* their dedications (one by Leochares) at the Amphiareion of Oropos, *JHS* LXXIII (1953), 112.

Diodoros of Paiania (*PA* 3953). Owner of *ergasterion* 14. 11–12 (restored), region unknown. Son Simos, lessee 13. 46 (restored and doubtful); 16 $a + b$ = Face A Col. II 62–3, region uncertain; owner of *ergasterion* 12. 7, region uncertain; 13. 45 owner (restored) of *ergasterion* on the boundary of a mine leased by him. Grandson (or brother?) -λης Σίμο [Παι]α[νι, lessee 5. 29, region uncertain. A son or brother of Simos, Diodoros (*PA* 3953) was trierarch 334/3, 325/4 and *c.* 323 B.C.

Kallias of Sphettos (*PA* 7891). Mine lessee 1. 42 in Nape, with the land of Nikias on all boundaries; 1. 65 in Nape, with land of Nikias on one boundary, therefore near the first? Also owner of property (unlocated) in Nape 1. 48, on the boundaries of a rich mine. Son Phaidros (*PA* 13964), cf. *Hesperia* XIX 235, registrant (restored) in *IG* II² 1582. 180–1. Phaidros was general 347/6, and 340, trierarch 323 B.C.

Kephisodotos of Aithalidai (*PA* 8321, *Hesperia* VII 3, no. 1. 8). See *Hesperia* XIX 244. Arbitrator 363/2 B.C. Lessee of mine ἐπὶ Λαυρείῳ (with κατατομαί), with the property of Diopeithes on two sides; the owner of the '*edaphe*' is not mentioned (see above, p. 221), 1. 56–7. Lessee of mine in his own property at Besa (with κατατομαί) 1. 71–6, but also in the property of Kallias, bounded on the east by the house and tower of Kallias of Lamptrai, on the north by his own *ergasterion*. Important for the character of the boundaries (see above pp. 221–2), including the shrine Archegeteion, which gave the mine its name. Son [- - - -]ς Κηφισοδότου Α[ἴθα: lessee of a mine at Besa (?) 15. 18–23; it is impossible to determine if it is the same as 1. 56–7; note that Demostratos I who owned a κάμινος on the boundary of 1. 56–7 is here represented by his son Aspetos, but the positions are different, north in 1. 53–7, and east in 15. 21.

Phanostratos of Gargettos (*PA* 14100), son of Archestratos. He was trierarch 353/2, 325/4, 323/2 B.C. See also *PA* 2422 for Archestratos, trierarch *c.* 377/6 B.C., and *PA* 2496 for Archikles, trierarch 334/3 B.C. Phanostratos appears as mine registrant *IG* II² 1582. 45, 49 at Thorikos, his own *ergasterion* being on the west boundary and land of Philinos on north and east; no mention of '*edaphe*'. Owner of '*edaphe*' (dubiously restored) in 20. 27, just possibly at Thorikos. Son possibly (dubious restoration) registrant 5. 21.

There are a few cases where persons appearing in the lease lists may possibly be connected or identified with names associated with the mines in literary sources:

Kallias (IV) of Alopeke (*PA* 7842), formerly believed to be of Ankyle,[330a] member of the great and wealthy Athenian family: see *stemma PA* vol. I opp. p. 523. Property owner 1. 64 in Nape, close to Nikias. Hipponikos II was probably the owner of the slaves mentioned by Xenophon (*Vect.* IV 15), since which time the family suffered a reduction in fortune. Hipponikos IV appears in 342/1 B.C. as the purchaser of two *ergasteria* in Melite (*Hesperia* V 400, no. 10, l. 110), but not as connected with the mines.

Hagnon (*PA* 164), son of Thrasippos, and his brother Hagnotheos (*PA* 147). Isaeus IV 1, 2, 24, 27 (*c.* 374 B.C.). Hagnon appears as lessee 20. 42 (date 338/7 B.C.?) of a mine ἐμ Φιλομηλ]ιδῶν called Hermaikon. This is not too late to be the same person. Hagnotheos (no patronymic) appears as the name of a lessee in 13. 63 (between 350/49 and 345/4 B.C.), details and region are lost; and in *IG* II² 1587. 4, all details lost.

Mantias of Thorikos (*PA* 9667; add *IG* II² 1609. 61, with Mantias restored as trierarch, not after 370/69 B.C.), and son Mantitheos (see *PA* 9675 and 9676). Father and son appear in Dem. XL 52 as purchasers of mines for which money was borrowed from the banker Blepaios, a significant point, since they must have had other resources (both appear as trierarchs). The purchase of mines was perhaps a short-term speculation. Mantias might possibly be restored as lessee in 2. 12, but it is very doubtful.

Unfortunately the relations of the individuals dealt with above to the deme system of Attica is not clear. Gomme,[331] possessing a good deal less material than we now have, pointed out that ' the owners of mines and smelting works in the Laurion district come from all over Attica—of those known, twenty four from inland demes, thirteen from the town, eighteen from coast demes: and of these last only twelve are from demes in or near the mining district '. The difficulty is, of course, the location of demes, frequently imperfectly known or not known at all. Nine demes which are known to be in the mining area are represented in the leases,[332] six known mining demes are not so represented.[333] Sounion, as might be expected, makes by far the most frequent appearance among the demes of mine operators and landowners, followed fairly closely by Thorikos and then by Amphitrope. Fifty demes occur which are not specifically known to be in the mining area; most prominent are Sphettos, Pithos (because of Pheidippos), Euonymon, and Gargettos. The figures, as far as they can be depended upon,[334] seem to show a proportionate preponderance (*i.e.* in proportion to the total) of property owners and lessees from mining demes, but it is doubtful whether the evidence is significant, in view of the disproportion, from whatever cause it may proceed, prevailing between registrants and lessees.[335] If any conclusion can be drawn from the material it is that there was no excessive purchase of land in the post-Cleisthenic period by persons not native to the region. The relative position of mine operators is difficult to assess: most noteworthy is the point that Sounion is the only mining deme (as far as is known) appearing among the demes of the families most prominent in the region in mining activity.[336]

[330a] Indeed the question is not quite settled, since a Kallias–Hipponikos family is clearly indicated by *IG* II², 2407 as belonging to Ankyle and the Aegeis tribe; unless, following the comment of Meritt, *Hesperia* V (1936), 410, drastic changes be made to the restoration in *IG* II².

[331] *The Population of Athens in the Fifth and Fourth Centuries B.C.* (1933), 46.

There are certain general conclusions to be reached on prosopographical grounds. Many individuals engaged at one time or another in mining, many (unless the material is quite misleading) on one occasion only. These mine operators were of varying status, not confined as far as we can judge to one class. But certain individuals of wealth and property were strikingly active in mining, and the operation of *ergasteria*, but it is to be suspected from the dates that there was not necessarily a great spread of their activities in time (*i.e.* sons' activities were more or less contemporary with their fathers'). It is interesting to note that some families confined themselves to property owning (though this impression may be produced by the defective evidence), and that the leasing of two concessions at the same time was rare, confined indeed to Crosby 1.[337] It also appears unlikely that the mines were the sole or the original source of the wealth of those of considerable financial standing, though many trierarchs appear in the list of those engaged in the mines.[338] Curious is the absence of aliens, though Xenophon (*Vect.* IV 12) mentions their participation ἐπ' ἰσοτελείᾳ, which is generally taken to mean ' on equal terms '. The only persons of foreign origin seem to be Kallaischros and Stesileides of Siphnos, who are property owners (doubtfully mine operators): if they were citizens they would be described by their demotic, therefore it is to be assumed that they were ἰσοτελεῖς possessing γῆς ἔγκτησις, which might indicate the other possible interpretation of Xenophon's statement.

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[332] Aigilia, Amphitrope, Anaphlystos, Hagnous, Kephale, Myrrhinous, Phrearrhioi, Sounion, Thorikos.

[333] Atene, Besa, Prasiai, Prospalta, Steiria, Thoraia.

[334] Note that a considerable number of names have no demotic: registrants 12 (+?4), lessees 21 (+?3), property-holders in land and houses 38 (+?3), *ergasterion* owners 20 (+?1).

[335] From mining demes (as far as these are known): registrants 7 (+?2), lessees 17 (+?6), property owners 19 (+?4), *ergasterion* owners (?3); from non-mining demes: registrants 28 (+?11), lessees 52 (+?17), property owners 30 (+?6), *ergasterion* owners 17 (+?3). In the case of mining demes four cases of landowners occur who also go in for mining (one an *ergasterion* owner); in the case of non-mining demes there are ten cases of landowners going in for mining; in five or seven cases they own *ergasteria*.

[336] The others: Aithalidai, Alopeke, Athmonon, Gargettos, Euonymon, Kydantidai, Kikynna, Kytherron, Paiania, Pithos, Sypalettos, Sphettos, Themake.

[337] It occurs only in Crosby 1: 42 and 65 (Kallias of Sphettos), 46 and 81 (Pheidippos of Pithos), 56 and 76 (Kephisodotos of Aithalidai), 49 and 51 (Thrasylochos of Anagyrous).

[338] *Cf.* the relative rarity of references to mining activity in Isaeus (one reference only to an *ergasterion* at Besa (III 22)), though it must in fairness be admitted: (i) that there is no reference in Isaeus IV to the mining activities of Hagnon, and (ii) that there are 44 other speeches preserved in fragments or titles, which might have corrected this impression. *But* cf. also the Demosthenic *corpus*, in which there is only one speech on a mining issue and one other in which it is incidental, while in Lysias there are no references to the mines.

IV. Historical Conclusions

It remains to assess the position of the mines in the economy of the fourth century. We do not need the word of Xenophon[339] to assure us that Attic silver found a ready market. It is clear that in an economy where, as far as we can judge from our relatively scanty information, the great problem was the production of exports to pay for imports, silver exported as bullion in the form of tetradrachms would form an important item. On the other hand Xenophon makes a more than usually superficial observation when he claims that the price of silver never declines, which must be an implication of *Vect.* IV 10: ἐκεῖνο μέντοι οἶδα, ὅτι καὶ χρυσίον ὅταν πολὺ παραφανῇ, αὐτὸ μὲν ἀτιμότερον γίγνεται, τὸ δὲ ἀργύριον τιμιώτερον ποιεῖ. Yet though in relation to commodities silver must have fluctuated in price, its wide use would prevent any very extensive downward movement of price.[340] Nevertheless, as a means of putting capital to profitable use the development of silver mines must compete with investment in agriculture, other industry, and mercantile loans: and the varying conditions of politics and international trade which influenced these spheres of investment, through variation of interest rates and greater or lesser risks, would influence silver-mining also, particularly the direct operation of mines. We are inclined to assume that possessors of considerable capital sank mines which they then exploited to the end, if there could be such a thing as an ‘ end ’. It seems more likely from what we have seen above that in times especially favourable to silver mining many took a certain profit out of a mine and then for a variety of reasons left it. The opening up of new mines (*kainotomiai*), with the special risks and costs attached to it, would take place only under some relatively rare stimulus. It is one of Xenophon's main worries that it did not happen often enough.[341] After the opening of the *kainotomiai* the workings would still be there, to be abandoned if silver-mining was less profitable than some other activity, and to be resumed again (as long as the underground workings did not go too far from the shaft) when it offered a greater prospect of profit. The chief equipment of the mine operator was his slave personnel; in comparison with these the rest of the equipment, of a very simple sort, represented much less capital: the slaves were, to a great extent, the hewing, transporting, lifting, and, no doubt, pumping machines. There seems good reason to believe that slaves were not always the property of the mine operator; in some cases, doubtless, they were, but the picture given by Xenophon suggests an alternative, that these slaves could be hired, by those who needed them, on the ἀποφορά system.[342] Dem. XXXVII 4 and *IG* II^2 2747 are examples where *ergasteria* and slaves go together. There must have been a ‘ pool ’ of slaves from which labour could be hired for use in the mines.[343] It was this body of slaves which Xenophon planned to increase by state intervention (*Vect.* IV 19): ἐπειδὰν δὲ ὠνηθῇ, τί ἂν ἧττον μισθοῖτό τις παρὰ τοῦ δημοσίου ἢ παρὰ τοῦ ἰδιώτου (O.C.T. παρὰ τῶν ἰδιωτῶν).

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[339] *Vect.* III 2.

[340] *Vect.* IV 7–9, though here there seems to be a play on the two meanings ‘ silver ’ and ‘ money ’.

[341] *Vect.* IV 28: τί δῆτα, φαίη ἄν τις, οὐ καὶ νῦν, ὥσπερ ἔμπροσθεν, πολλοὶ καινοτομοῦσιν; ὅτι πενέστεροι μὲν εἰσιν οἱ περὶ τὰ μέταλλα· νεωστὶ γὰρ πάλιν κατασκευάζονται. Note that κατασκευάζονται here may well mean not *kainotomiai* but the restoration of *palaia anasaxima*.

[342] Fifth-century examples, especially Nikias I (*cf.* Thucydides VII 86, 4 for his rating as a wealthy man), are given in Xenophon, *Vect.* IV 14–15. Note that Plutarch (*Nicias* 4, 2) regards Nikias as directly participating in mining: καὶ πλῆθος ἀνδραπόδων ἔτρεφεν αὐτόθι; *cf.* Xenophon, *Memorabilia* II 5, 2 on the *epistates* purchased by Nikias, identified, against Schwahn (*RhMus* LXXX (1931), 257), by Thiel, Πόροι (Amsterdam, 1922), and Wilhelm (*WS* LII (1934) 19–20) with the Sosias of *Vect.* IV 14 (comparable to Pasion's freedman Phormio). Xenophon discusses fully the use of slaves in the mines (*Vect.* IV 17, 22), and deals with the ἀποφορά system (IV 19, 23). Boeckh regarded the obol per day ἀτελής as an excessive net income from slave owning, but *cf.* Hypereides I, col. 2, 1–2 (O.C.T.) (note the date of this speech in a period of active mining, *c.* 340 B.C.), where a similar sum is mentioned for mining slaves. The profit in thus hiring out slaves (and so the relative advantage of this over other forms of capital investment) would depend on the cost and working life of the slave. If the slave cost 150 drs. (see *RE* Suppl. Bd. IV 144; but some slaves cost only half a mina, Xenophon, *Mem.* II 5, 2) and his working life was ten years (yearly depreciation of 15 drs.), there would be a yearly return of 45 drs. (60 – 15) on 150 drs., that is 30 per cent., a very good return, though suffering from the disadvantages of οὐσία φανερά. In a working life of five years the return would be 20 per cent. But we lack the vital statistics. The ἀποφορά system could be applied to single slaves (*cf.* Andocides, *de Myst.* 38, of the late fifth century), and it was probably the simplest way for poor persons to share in mining activity.

Such a ' pool ' made possible participation in mining for men of very different financial resources for a long or short period, so mines could be easily and quickly taken up or abandoned again as far as the labour problem was concerned.[344] The question of the *ergasteria* is rather different. A few only of the slaves need be skilled. A great deal of labour and capital outlay were represented by the water cisterns and washing tables, not so much by the furnaces, which must have been relatively small and simple, though, in fact, we know little about them. In the beginning it was certainly a fairly costly and speculative business to erect the *ergasteria* and cisterns, especially as they could not be moved from place to place, but consistent repairs at a small cost would maintain them in an efficient state even in periods of inactivity. Those who erected them might expect large and quick profits in a boom (the position would be much the same as with the *kainotomiai*): those who inherited them would be content with a small return, again to be enhanced in times of greater mining activity.

The assessment of the evidence on the Laurion silver mines in the fourth century is not easy, and is made the more difficult by the fact that no secure comparison can be made with conditions in the fifth century. It is generally felt [345] that the mines were of considerable importance to the economy of Athens. As seen above, it is easy so to argue, and what is true of the State is true also of private fortunes, or seems to be. Incidentally, in the fifth century the extent of the use of Athenian coinage and its imitation do not prove the importance by themselves of *Laurion* silver. Whatever may be the truth about the fifth century as a whole, the occupation of Deceleia gravely affected the mines [346] and cut off or greatly reduced the silver supply, though this was not the only reason for the issue first of emergency gold and then of plated coins.[347]

When peace was restored the resumption of operations in the mines [348] was clearly of great importance: (1) for the restoration of the economy in general—now, if ever, it would be felt that the mines could help in the replacement of the imperial tribute; (2) particularly for the restoration of the coinage, both for internal and external trading purposes; (3) for the payment of indemnities. Athens needed exports to pay for corn imports more than ever: apart from wine, oil and pottery, all based on native natural products, manufactured goods needed raw materials which had to be imported for the most part. The silver mines, therefore, would seem to be a great asset to Athens, but the same causes which produced the need for more silver checked the quest for it. It is easy to form a distorted picture of the depredations of the oligarchs or of the lack of confidence occasioned by their acts and confiscations, but there can be no doubt of the serious economic difficulties of the end of the fifth century and the early fourth. The great expenditure on military operations 413–405 B.C. by an impoverished Athens fell on the well-to-do citizens. Overseas trade was still possible in a variety of directions for a time,[349] but Attica was of much diminished value as a source of wealth and supplies. There seems good reason to believe that many of the liturgies and *eisphorai* were met out of fluid capital,[350] which explains the attrition of considerable fortunes—a matter for comment in the early fourth century.[351] A feature of the later Peloponnesian War was the damage done to the land of Attica.[352] The first and obvious need was the recovery of the land, which required capital (especially for the planting of vines and olives), and was likely at first to provide an opportunity for speculation offering the greatest prospect of profit, thus competing for the diminished capital available. It is true that the surface establishments at Laurion (see above p. 204) were not such as to have suffered serious deterioration in the later stages of the war, and would require little to restore them; what the condition was of the actual mines it is difficult to say, but if there had been a period of intensive exploitation between 423/2 B.C. (when the Athenians lost the North Aegean sources of supply) and 413 B.C., there was probably need for more extensive prospecting and shaft-construction, as well as deterioration in the existing workings. The subaerate money was withdrawn in the late nineties,[353] but this must not be taken as an indication of the restoration of the mines, for it followed after the battle of Knidos (394 B.C.) and the arrival of Persian funds in Athens.

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[343] Important contributors to such a ' pool ' would be Nikias I, Hipponikos II, and Philemonides (Xenophon, *Vect.* IV 15).

[344] The proposed direct employment of slaves (*Vect.* IV 30) for the opening of *kainotomiai* (which would not compete with private persons, IV 32) is not to be taken as indicating either two separate areas of mining activity or direct state participation.

[345] On no very satisfactory evidence: in the main it is the reference of Thucydides (VII 27) to the flight of slaves to Deceleia, the references to the employment of slaves by Nikias, Hipponikos, and Philemonides in the mines, and one or two other isolated references: Aristophanes, *Equit.* 362 (purchase of mines), *Aves* 593 (birds to help in mines and trade), 1106 (Laureotic owls); *Hesperia* XIV (1945), 119 ff., an inscription with an obscure reference to the administration of the mines. We have, in fact, no certain or fairly sound basis on which to assess the importance of the Laurion mines in the fifth century. The period in which we hear most of them is the second half of the fifth century, and this cannot altogether be due to the absence of earlier inscriptions and primary authorities. It might be suggested that the loss of Amphipolis occasioned a development of the Laurion mines.

[346] It seems doubtful if they could be defended. Xenophon (*Vect.* IV 43 ff.) envisages no more than making things difficult for an invader, *i.e.* an invasion of the Archidamian War type. It is uncertain how far the Spartan invasions during the Archidamian War damaged the mines (Thuc. II 55), probably not to any great degree, since the invasions seem to have been directed mainly against cultivated land.

[347] There was also a grave lack of funds after the defeat of Notion (407 B.C.), so that in the archonship of Kallias (406/5 B.C.) it was decided to convert the dedications into special issues (406/5 and 405/4 B.C.) including gold (*cf.* Aristophanes, *Ranae* 717 ff.), followed by an issue of silver-covered bronze (*Ranae* 725 ff. and Schol.). They were recalled after the battle of Knidos, *Eccl.* 815 and Schol.

[348] At this juncture, either under the oligarchs or the restored democracy, any change is most likely to have taken place from state direct operation of the mines to the practice of leasing them to private individuals, with retention of mineral rights by the State.

When once the relative well-being of Athens was restored, the economic activity of the State, of which silver mining was a part, was represented by three broad categories: (i) the growing of natural products, cereals, vines, olives; (ii) the employment of capital in banking and money-lending, the latter in part concerned with mercantile loans and the trade in corn among other commodities; (iii) industry, in the form of factories, an extension, as far as we can judge from the examples we know, of domestic industry, together with quarries and mines. In the case of all three forms of activity the financial policy and needs of the State for ordinary and extraordinary revenue must have exerted considerable influence. It is not unreasonable to ask to what degree the internal and external affairs of Athens influenced her economic activity, including silver mining. It is claimed, for instance, in (Dem.) XLII 21 that cultivators flourish, while mine operators have experienced a period of misfortune.[354] At first sight it might seem that speculators and therefore capital would be attracted to corn production, because of the recurrent uncertainty, and permanent importance of imported corn, and the occasional high prices. There is nothing intrinsically unlikely in the idea of agricultural activity being pursued even for a short time if for various reasons it was profitable.[355] But was it profitable to a degree to justify speculation? Corn prices were occasionally very high,[356] but it seems clear that, despite the many alarms and dangers to the supply, the Athenian policy of encouraging and protecting the corn trade secured a reasonable standard price in all but the worst times, though in the later fourth century corn was nearly double the price it had been in the earlier years.[357] In producing this effect non-speculative agriculture, which remained of very considerable importance, no doubt had its share, but the decisive element must have been the importance of Athens as a port and centre for mercantile loans. Frequently the fluctuations in price, whether produced by the machinations of the *sitopolai* or by external events, were too rapid to be the encouragement to speculation in corn production.[359]

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[349] Lysias XXXII 4 and 25; Xen. *Hell.* I 1, 22 and 35.
[350] Lysias XIX 42 ff., XXI 1, Isocrates XV 160 ff.
[351] Lysias XIX 45 ff.
[352] Lysias VII 6, Aeschines II 147.
[353] If this is the meaning of Aristophanes *Eccl.* 815 ff., date 393 B.C. (Rogers), 391 B.C. (Platnauer). See above n. 347.
[354] Speech dated by Blass, *Attische Beredsamkeit* III i 505–6, to *c.* 330 B.C.
[355] *Cf.* Lysias VII 4–10: speculation seems in part to be the reason for the changes of cultivator.
[356] *Cf.* the 16 drs. per medimnus of (Dem.) XXXIV 39.

In two periods, however, a severe general shortage of some length and magnitude might seem to justify greater than usual investment in agriculture: (i) *c.* 362 B.C., perhaps continuing to 356/5 B.C., the occasion of a drought and a period when Athens was weak on the sea and sailing was unsafe, and therefore mercantile trading was also uncertain; and (ii) the great corn shortage [360] commencing with the years after Chaeronea, accentuated by Alexander's preparations 335/4 B.C. and by Cleomenes' machinations, and continuing for a number of years. In this period merchants were very active, and the advancement of trade a matter of policy.[361] There is at least one indication [362] of a slack market for exports in South Russia (*c.* 333/2 B.C.), competition from other importers of corn,[363] and prosperity of agriculture.[364] An inspection of the mining lease lists (Crosby 19–28, 339/8 B.C. to ' mid-'30's '; 29 and 31, as far as can be judged, ' post mid-'30's ') shows no great mining activity, and the need for corn may well be the reason, seemingly confirmed by (Dem.) XLII 21, which, however, stresses the recently past *difficulties* of mine operators (not lack of capital) and suggests other reasons (see below p. 252) for a decline of mining activity. The earlier period of general corn shortage lies between Crosby 1 (367/6 B.C.) and the list it presupposes (three or seven years before, so *c.* 374 or 370 B.C.) and the period of considerable mining activity indicated by Crosby 13–18, *c.* 350/49–341/40 B.C. The mine lists for this period [365] are mostly very fragmentary and insecurely dated (though the indications given by Crosby seem justified); the evidence they provide would not justify the conclusion that we have here again a decline in mining activity in a period when capital could find employment in agriculture,[365a] and the question must be left open. Whether there were other factors operating to check mining activity will be considered below. It must also be stressed that, even if corn or barley production did not attract speculation and employ capital, at all periods the planting of vines and olives, and especially olives, must have done so.[366]

Clearly distinguished from the periods considered above is that of Crosby 13–18, *c.* 350/49–341/40 B.C., with a peak perhaps at 342/1 B.C., a time of considerable mining activity. This was a period of stress: after the Social War came the Olynthian War 349/8 B.C., the Euboean campaign 348 B.C., a break at the Peace of Philokrates 346 B.C., and the beginnings of the struggle in Thrace and the Chersonese 342–39 B.C. A number of factors seemed to conspire together to make life difficult for the Athenian, his trade, and especially the corn supply: Macedonian attacks on Athenian shipping and the corn route, similar activity on the part of Byzantium, corn shortage, attacks of pirates, depredations of Athenian commanders directly or indirectly affecting Athenian trade.[367] But it was claimed that the price of corn was low before the Peace of Philokrates,[368] despite Philip's attacks which seem to have worried the Athenians considerably.[369] This seems to be the time of Xenophon's *Vectigalia*,[370] a period of recovery, as the writer represents it, after years when Athens' resources had been taxed and were now being restored; [371] mining was being resumed, though *kainotomiai* were not attempted: τί δῆτα, φαίη ἄν τις, οὐ καὶ νῦν, ὥσπερ ἔμπροσθεν, πολλοὶ καινοτομοῦσιν; ὅτι πενέστεροι μέν εἰσιν οἱ περὶ τὰ μέταλλα· νεωστὶ γὰρ πάλιν κατασκευάζονται.[372] This was the period of the replacement of Aristophon by Euboulos and of peace after the Social War. The period of the Social War was represented as one of impoverishment for Athens,[373] the ensuing peace as producing recovery.[374] The careful and moderate policy of Euboulos would favour the well-to-do, and, while not removing all the tendency to convert οὐσία φανερά to οὐσία ἀφανής which promoted banking and lending,[375] would reduce the need for *eisphorai*. It might be suggested that it was under Euboulos that exemption from liturgies was given to τὰ ἐν τοῖς ἔργοις,[376] which must mean property in the mining region and connected with the mines. This was therefore a good period for engaging in mining activity and still more promising for the optimist after the Peace of Philokrates (until shadowed by the resumption of the struggle with Philip, and the battle of Chaeronea (338 B.C.)): there was no strong competition with agriculture; no reason for high rates of mercantile interest. On the other hand, it must be observed that there are no grounds for believing that in every case mining offered the best return; [377] it depended on the quality of the mine and the amount paid for it, for the lending of money at interest even on a good security appears always to have commanded a good and fairly safe return.[378] Even mercantile loans were no more risky a speculation than the opening up of new mine workings, and they were easier to conceal than gains from mining, which could hardly be immune. It is not surprising that there was no great rush of those without what may be called a family mining tradition to take mining concessions.

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[357] Five drs. ((Dem.) XXXIV 39) as compared with 3 drs. (Aristophanes, *Eccl.* 547) per medimnus. *Cf.* also *IG* II^2 1672. 282 (329/8 B.C.), 6 drs. per medimnus. No note 358.

[359] *Cf.* the effect of the Σικελικὸς κατάπλους in Dem. LVI 9.

[360] *Cf.* for its great extent the number of states, among which Athens figures first, which received a distribution of corn from Cyrene (330–26 B.C.), *SEG* IX 2 (where the literature is listed). The Athenian difficulties can be gauged from the honours accorded to merchants who assisted in bringing corn to Athens, (Dem.) XXXIV 38–9, *IG* II^2 342, 407, 408, 409, 416, 423.

[361] See Demosthenes' mercantile speeches, *passim.*

[362] (Dem.) XXXIV 36–7.

[363] (Dem.) XXXIV 8.

[364] (Dem.) XLII 21.

[365] Crosby nos. 2–12: nos. 4–5 with 14 and 20 leases, date before or near mid-century; nos. 6–12, just before mid-century.

[365a] The drought of *c.* 362 B.C. ((Dem.) L 61), when ' the water failed in the wells ', would affect both agriculture and mining.

[366] *Cf.* the law against cutting down olive trees, (Dem.) XLIII 69–72 (? 342 B.C.), and the leasing of land with a view to such development or replacement of old stocks, *IG* II^2 2492 (Kahrstedt, *Forschungen* 211–12; Bleckmann 27; Roberts-Gardner 129; Finley, *Studies in Land and Credit in Ancient Athens*, passim (see Index, p. 320)).

The apparent decline in mining activity in the period after Chaeronea has already been considered in reference to the corn shortage. It was the period of the administration of

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[367] Dem. IV 34, XVIII 72–3, 87; Dem. V 25; Dittenberger, *SIG*^{3}, 212 (*c.* 350 B.C.); Aeschines II 12; Aeschines II 71–2, Dem. II 28, VIII 24–5.

[368] Dem. XIX 218. *Cf.*, for what the speech is worth, Dem. X 49 for stress on market plenty (341 B.C.?): .... τὸ τῶν ὠνίων πλῆθος ὁρῶντες κα ὶτὴν εὐετηρίαν τὴν κατὰ τὴν ἀγοράν, ...

[369] *CAH* VI 228.

[370] The exact date of the work is impossible to determine: after the end of the Social War, V 12; perhaps in the course of the events which led up to the destruction of Olynthos (348 B.C.) if V 13 is a reference to Philip; during the course of the Sacred War, V 9, clearly before the Peace of Philokrates.

[371] *Vect.* IV 40, V 12.

[372] *Vect.* IV 28 (Teubner); O.C.T., μὲν νῦν εἰσιν.

[373] Isocrates VIII 19, Dem. XX 24 (354 B.C.), XXIII 209 (352/1 B.C.), all doubtless exaggerated (A. H. M. Jones, *The Athens of Demosthenes* (1952), 10–11); Demosthenes incidentally contrasts public poverty with private wealth (XX is of the same year as Demosthenes' speech on the Naval Boards (XIV)).

[374] Isocrates VIII 20–1; *cf.* the references to war and small income, and succeeding peace and increased revenues in (Dem.) X 37–8.

[375] *Cf.* Dem. XLV 66, Aeschines I 101.

[376] (Dem.) XLII 17–19. The question of the date of this relief is an obscure one and is bound up with its precise meaning. It is not easy to discover from (Dem.) XLII the extent of the *ateleia* accorded to τὰ ἐν τοῖς ἔργοις τοῖς ἀργυρείοις, ὅσα οἱ νόμοι ἀτελῆ πεποιήκασι ..,........... (XLII 18, *cf.* 17, and 23: .... τὸν νόμον ἐκεῖνον ἀνάγνωθι τὸν οὐκ ἐῶντα τῶν ἐν τοῖς ἔργοις οὐδὲν ἀποφαίνειν). It is difficult to believe that income was exempt. XLII 23 with τῶν ἐν τοῖς ἔργοις οὐδὲν .... would seem to indicate all property in the mining region concerned with the mines, which would encourage *ergasterion* owners as well as mine operators (indeed it must mainly have concerned *ergasteria* and slaves where these were not hired, and little other property of the mine operator would be assessable, which is perhaps why the speaker of (Dem.) XLII so generously says: καὶ ἀφίσταμαι μετὰ τῆς ἄλλης οὐσίας καὶ τῶν ἐν τοῖς ἔργοις). On the other hand, in Aeschines I 101 the father of Timarchos, who owned ἐργαστήρια δύο ἐν τοῖς ἀργυρείοις ἓν μὲν ἐν Αὐλῶνι, ἕτερον δ' ἐπὶ Θρασύλλῳ ...... (*i.e.* probably the Θράσυμον of the lease lists), is said to have sold these with other property φοβηθεὶς τὰς λειτουργίας. (These *ergasteria* must be referred to again *ibid.* 105, where the suggestion is made that Timarchos may have imitated his father and after selling his other property εἰς τἀργύρειά τι κατεσκευάσατο ὥσπερ καὶ ὁ πατὴρ αὐτοῦ πρότερον.) This seems to indicate that *ergasteria* at some time before the date of the speech against Timarchos (345 B.C.?) were not ἀτελῆ. Certainly in 354 B.C. Demosthenes (XIV 16) makes no mention of such exemption. It is possible that the granting of *ateleia* helped with the development of mining activity in the forties, and was part of the policy of Euboulos, or it may have been a later innovation not long before the date of (Dem.) XLII, and part of that assistance to those engaged in mining activity which is mentioned *ibid.* 31.

[377] See n. 342 above, on the ἀποφορά system.

[378] (Dem.) XXXIV 23, 16$\frac{2}{3}$ per cent.

Lycurgus (338–26 B.C.), whose work in increasing the revenues[379] was coupled with an advancement of trade. Lycurgus was also the prosecutor of Diphilos,[380] and it is possible that a tendency to sycophantic charges checked mining activity, as is inferred by Hypereides, who between 328 and 323 B.C.[381] stresses the renewal of confidence and *kainotomiai*, as does the contemporary (Dem.) XLII, which contains references to a μέταλλον δημευθέν and to a similar restoration of confidence and assistance to mine operators. This improvement (on the harsher policy of Lycurgus?) must have consisted in a more careful scrutiny of charges of unlawful mining.

On the other hand, the latest of Crosby's collection of lease lists[382] do not bear out the idea of the improved activity referred to by Hypereides and Demosthenes (XLII), who may, indeed, exaggerate. Even making allowance for the defective character of these lists, they are as a whole clearly on a much smaller scale than many of the earlier ones, apart from Crosby 32 of 320/19 B.C., which records *c.* 12 leases. If there was a fair degree of activity after *c.* 330 B.C., it did not last long. Even if there was considerable mining from this date to the death of Alexander, the Lamian War must have reduced it greatly. The establishment of the oligarchic régime and its modification under Demetrios of Phaleron 318–07 B.C. would, it might be expected, favour agriculture rather than industry or mining, and it is in this sense that the statement of Demetrios should be taken[383] . . . . . ὅτι φησὶν ἐκεῖνος ἐπὶ τῶν Ἀττικῶν ἀργυρείων, οὕτω συντόνως ὀρύττειν τοὺς ἀνθρώπους ὡς ἂν προσδοκώντων αὐτὸν ἀνάξειν τὸν Πλούτωνα. That this is not an expression of approval seems to be clear from the 'riddle' which follows (also part of Demetrios' comment?): ὅσα μὲν γὰρ ἀνέλαβον (φησίν) οὐκ ἔλαβον, ὅσα δὲ εἶχον, ἀπέβαλον. Whatever it means it is not an expression of approval. It is to be suspected that Demetrios' observation is a general comment on Attic mining, and need not be taken to apply particularly to his time, as the lease lists seem to show. Apart from what might be called an ideological objection to mining, there were certain practical difficulties. It is not likely that the opening up of other sources of silver affected the demand,[384] but the fuel supply must have become progressively more difficult,[385] so much so indeed that the stories of later activity and the employment of great numbers of slaves, apparently in the resmelting of old slag heaps, must be accepted only with the greatest reserve.[386]

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[379] Andreades, *History of Greek Public Finance* 354: a large increase from *c.* 340 B.C. is inferred where Lycurgus (Plutarch, *Vit. X Or.* 841 B) is said to have controlled (ταμίας ἐγένετο) in twelve years 14,000 or 18,650 talents: *ibid.*, making available to the city a revenue of 1200 talents, 'being formerly 60' (for 600?); and Demetrios of Phaleron (Athenaeus 542c, from Douris) is said to have been master of (κύριος γενόμενος) 1200 talents per year. Neither source inspires confidence or justifies the conclusions often drawn from them.

[380] If the Diphileion is in fact Diphilos' confiscated mine, it is very possible that it was purchased by Kallimedon the oligarch (*IG* II^2 1587. 12). Crosby dates the lease 320/19 B.C.; could it be somewhat earlier in the 320's, under Lycurgus' régime?

[381] III (IV) 36. See n. 184 for date.

[382] Crosby nos. 29 and 31 of 'post mid-30's' and nos. 32–8, from 320/19 B.C. to the end of the century and beyond.

[383] Quoted by Strabo (III 2, 9) from Poseidonios. *Cf.* Diodoros V 37 for the 'riddle', and unfavourable comparison of Attica with Spain. Information on Laurion was probably derived originally from Theophrastos' work *On the Mines*.

[384] Cilicia might be a new source of silver made accessible by Alexander's conquest, cf. *AJA* LVI (1952), 203 and 228. In any case the development of the Pangaion deposits by Philip at an earlier date does not seem to have had this effect; the same seems to be true of other sources, such as Damastion. Indeed, it has been suggested that there was only a temporary boom at Philippi (V. Martin, 'La Durée d'Exploitation des Gisements Aurifères de Philippes en Macédoine', 21, in *Études dédiées à la mémoire d'André M. Andréades* (Athens, 1940)).

[385] Especially the expense on wood, which was costly, as is apparent from *IG* II^2 1672, 62–3, and *passim.*

[386] There was a tendency in ancient times to exaggerate the importance of Laurion in the late period. Strabo (IX 1, 23) mentions the workings and the resmelting of the earlier slag; Pausanias (I 1, 1) speaks of the mines as belonging to a former day. On the other hand, Athenaeus (272e) mentions the 'many myriads of chained slaves who worked in the mines', and since he has just previously given the slave population of Attica under Demetrios of Phaleron as 400,000, there is a strong inference that the mines were very active in the late fourth century. But all the figures of slaves given by Athenaeus are doubtful. He then mentions the Attic slave-rising contemporary with the Second Slave War (103–99 B.C.), for which Poseidonios is quoted as the source, but his authority is not to be extended to the figures given earlier. Sundwall (*Unters. über die attischen Münzen des neueren Stils* (1908), 110 n. 2) and Oikonomos (*AM* XXXV (1910), 296–7) suggest that the abbreviations on some new-style Attic tetradrachms represent the names of mines such as appear in the leases. It is an attractive but doubtful suggestion, and would indicate some form of reorganisation of the administration.

Something must now be said on the subject of mining activity in the earlier fourth century, at a period for which we have up to the present no lease lists. Some general observations have already been made (above, pp. 248–9). The evidence is scanty in the extreme. The earliest lease list we possess, Crosby 1 of 367/6 B.C., presupposes *one* other list, referred to as ἡ στήλη, with no distinction by archon-name such as is employed later. Even if, on the basis of what has been said above, a term of at most seven years or at least three years is accepted as the lease period, which takes the date for ἡ στήλη back to 374/3 B.C. (seven-year term) or to 370/69 B.C. (three-year term), and so dates the commencement of a new system either of exploitation or of registration of the mines, it is none the less difficult to explain τὰ ἐκ τῆς στήλης of Crosby 1. What of the other yearly stelai standing between 374/3 B.C. (or 370/69 B.C.) and 367/6 B.C.? Are we to assume a gap and no registrations between these dates? The alternative, in our present state of ignorance, is to assume that ἡ στήλη was of the year before 367/6 B.C., which would, indeed, explain the limited number of clearly successful concessions, followed by what seem to be other initial ventures. In this case the period of renewal was yearly, and the later system had not been introduced.[386a] That some changes had taken place and a new system of some sort introduced is clear from the undeveloped record system. It is not likely that this period would see a basic change in the mode of exploiting the mines (see above n. 206); more likely is a change in the form of administration, which might have included placing the mines in the charge of the *poletai*. The dates of Crosby 1 and of the preceding list(s) fall within the period of activity of Kallistratos at Athens (378/7–61 B.C.), a statesman whose record and activities elsewhere [387] would justify the view that he turned to the Laurion mines as a source of revenue.

If this is correct, the immediate success was not great. The occurrence of but one confiscation sale in Crosby 1 is surprising, and would prompt the suggestion that another list had been lost, if it were not that mine leases are here listed in all but three prytanies (sixth, eighth and tenth, not the last three) and another list of these leases could hardly have existed. More than this cannot at present be said, and the same uncertainty prevails on the period from the end of the Peloponnesian War to 367/6 B.C.

For a time, as noted above, the restoration of damaged farms, orchards, and vineyards would require capital,[388] but the process of restoration must have been completed long before 367 B.C., and corn was cheap after the battle of Knidos,[389] though this was in part due to freedom of trade. The Corinthian War (396–86 B.C.) was not a very easy time for Athens.[390] This is the period of the manoeuvres of the corn dealers, producing temporary high prices,[391] and of the Spartan stranglehold at the Hellespont, which again was temporary, like the similar Spartan blockade which was raised by the battle of Naxos (376 B.C.) after producing a corn shortage in Athens.[392] In general, however, the impression is given that the food position was critical only at intervals and varied with the hazards affecting foreign trade,[393] which was, as ever, the vital source of Athenian supplies. Agriculture was not likely to compete for capital, but foreign trading ventures would, especially in a period of poverty and lack of money in Athens,[394] and when mercantile or other loans, as οὐσία ἀφανής, made possible the avoidance of public financial burdens, the liturgies and *eisphora*. It is possible also that in the period shortly after the Peloponnesian War the fear of being thought 'old rich' and oligarchic or 'new rich' and tax-dodgers[395] would cause men to avoid mining ventures, which were only too liable to sycophantic attacks. For the rest we must await the appearance (or proof of the non-existence) of lease inscriptions earlier than Crosby 1.

[386a] Yet a yearly period of renewal, if combined with some form of counterbidding, would clearly be disadvantageous to mine operators. On the other hand, ἡ στήλη (as being undated by an archon) seems most likely to be of the year before (on various grounds it could not be of the same year). An explanation, purely conjectural, it must be stressed, which would cover this and at the same time take account of a change of administration, might be given thus: mining operations had not been especially successful nor yet strictly supervised, until, in 368/7 B.C. or one or two years earlier, a few mines yielded rich supplies of silver, and attracted the attention of the State officials and or other speculators. ἡ στήλη would then represent the decree establishing the system of tenure and payments to be followed thereafter, and listing the rich mines, which, as ἐργάσιμα, must contribute a higher sum from the next year or at any rate be subject to counterbidding.

[387] See *PA* 8157 and Andreades, *History of Greek Public Finance* 206 n. 7.

[388] Cf. *c.* 395 B.C., Lysias VII *passim*, Xenophon, *Oec.* XX 22–3, Pöhlmann, *Soziale Frage* I 189.

[389] *CAH* VIII 566–7, due to preference given to Athens in South Russia even in a corn shortage, Isocrates XVII 57; corn 3 drs. per medimnus, Aristophanes, *Eccl.* 547 ff.

[390] A difficult winter 387/6 B.C., Xen. *Hell.* V 1, 28.

[391] Lysias XXII 8, 14, 16, 18.

[392] Dem. XXII 15 probably refers to this period; *cf.* Xen. *Hell.* V 4, 61.

[393] For trade and threats to it, *cf.* Lysias XIX 50; piracy, Xen., *Hell.* V 1, 2 (388 B.C.), V 1, 21, Polyaenus VI 2, 2, Isocrates IV 133; piracy from Aegina, *Hell.* VI 2, 1.

R. J. Hopper

[394] Lysias XIX 11 (of 388 or 387 B.C.).

[395] 'Old rich', Lysias XXI 1, Isocrates XV 160 (πολὺ γὰρ δεινότερον καθέστηκε τὸ δοκεῖν εὐπορεῖν ἢ τὸ φανερῶς ἀδικεῖν), *cf.* Xenophon, *Oec.* II 6–7; 'new rich', Lysias XXVII 9–12 (395–86 B.C.), XXVIII 7.

FURTHER EXCAVATIONS AT AETOS[1]

(PLATES 40–70)

STRATIFICATION

AFTER the close of Mr. Heurtley's excavations,[2] an attack on the site by illicit diggers showed that the deposit had not been exhausted and that there were still fine vases (*e.g.* 1023, PLATE 22) to be found there. Moreover, some of the conclusions [3] drawn from the facts observed at Aetos merited further investigation.

Date of Building 9.[4]

Bench mark for both excavations was the threshold of St. George's Church. Heurtley kindly allowed me to use some of his plans, so we uncovered part of Building 9, and were thus able to fit the plans of the two excavations together. I have included Building 9 on my plan (FIG. 1), also the ' Cairns ' 1, 2, 4, and Wall 6. An undisturbed part of the foundation trench of Building 9 contained sherds of sixth-century Corinthian kotylai, so it cannot be the Protocorinthian temple as Heurtley suggested: no offerings were connected with it.

' The Cairns ', probably Dwelling-houses.

Heurtley lists as many Protogeometric sherds from the rest of the excavation as from the ' Cairns '. We found Protogeometric sherds in every part of our excavation. Miss Lorimer [5] states that Corinthian Geometric pottery was found in the ' Cairns '. In the few parts of our excavation where Protogeometric appeared to be stratified, it was undoubtedly accompanied by Early Geometric pottery: one Early Geometric kantharos handle may be imported, most of the other Early Geometric pottery found there is probably local. One of these places was surrounded by greasy black earth and seemed to be a hearth, so it may be suspected that the ' Cairns ' are in fact the remains of dwelling-houses. Ithaca falls into line with other places

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[1] I take this opportunity to acknowledge my debt to the British School at Athens for enabling me to work so happily in Greece, to its successive directors for their sympathy and support, to my old chief, Mr. W. A. Heurtley, for taking so much trouble to start me on my way, to my devoted helpers on the excavation, V. R. d'A. Desborough, T. J. Dunbabin, F. H. Stubbings, H. Waterhouse, to the surveyor N. Bruce, to later assistants whose names will appear in the publication, to J. K. Anderson, R. V. Nicholls, E. A. B. Petty, and, finally, to all my good friends and helpers on the beloved island. I have to acknowledge with gratitude financial aid from the British School and from the Craven Committees of the Universities of Oxford and Cambridge. My best thanks to Miss Petty for doing most of the drawings.

[2] The abbreviations are those usually employed in *BSA*, with the addition of the following:

Åkerström	Åkerström, *Der Geometrische Stil in Italien.*
Cumae	E. Gàbrici, *MA* XXII.
*H.	W. A. Heurtley, *BSA* XXXIII.
Kahane	P. Kahane, *AJA* XLIV.
Kerameikos	W. Kraiker and K. Kübler, *Kerameikos : Ergebnisse der Ausgrabungen.*
Myk.	L. H. III.
NC	H. Payne, *Necrocorinthia.*
P.	Protogeometric.
PV	H. Payne, *Protokorinthische Vasenmalerei.*
*R.	M. Robertson, *BSA* XLIII.
VS	K. F. Johansen, *Les Vases Sicyoniens.*
*W.	S. S. Weinberg, *Corinth* VII 1.

(* Numbers after these refer to running numbers, not to pages.)

Note on Lost Vases. The vases from my excavation were moved during the war into a leaking building. Two aryballoi were removed by the Occupying Power, but surprisingly few others suffered damage. For earthquake damage (1953) see note at the end of this article.

[3] *BSA* XXXIII 25, 33–6, 63–5. [4] See *ibid.* 26, fig. 3. [5] *BSA* XXXIII 28. See also *errata* in *BSA* XXXIV.

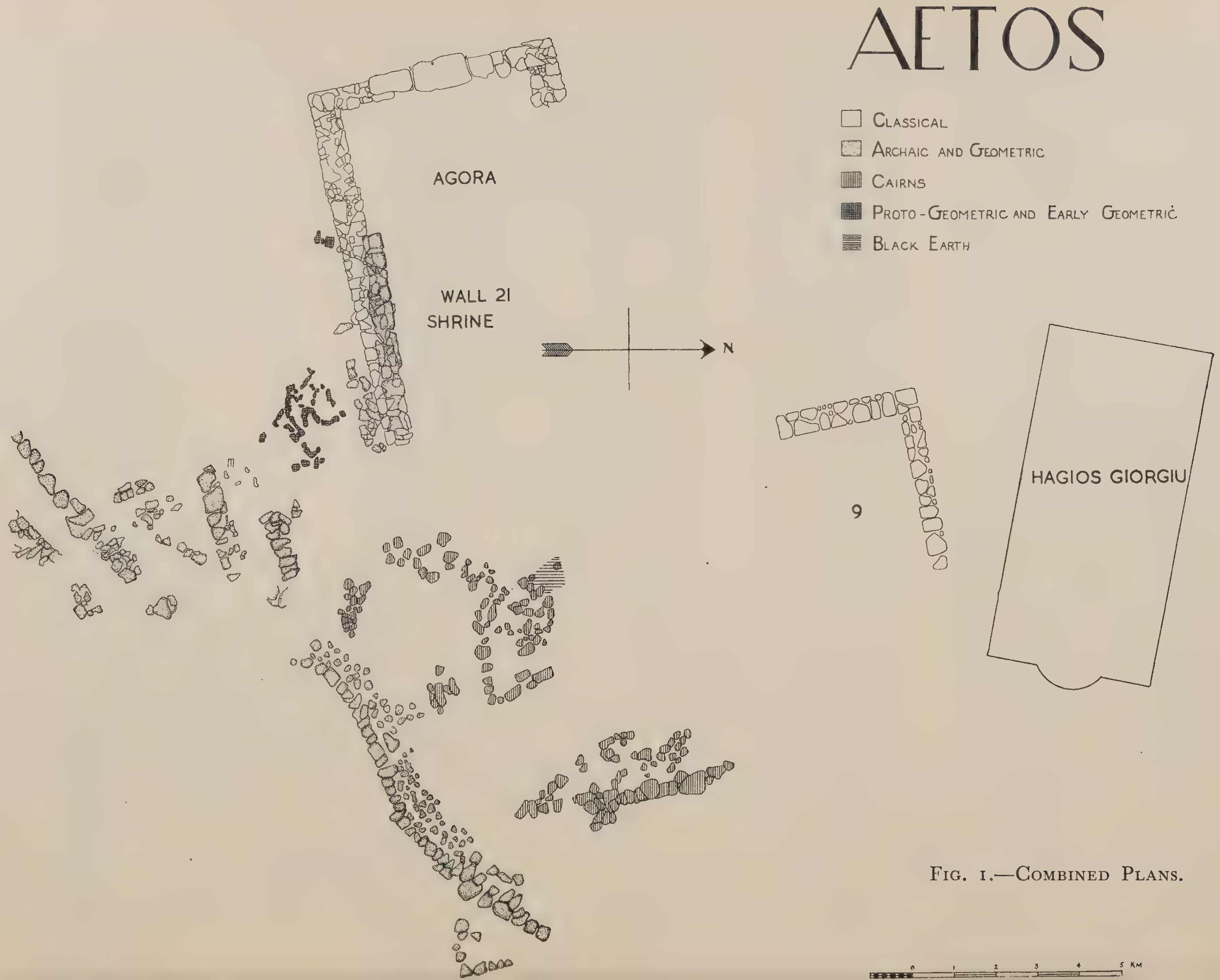
AETOS
Classical
Archaic and Geometric
Cairns
Proto-Geometric and Early Geometric
Black Earth
AGORA
WALL 21
SHRINE
N
HAGIOS GIORGIU
9
0
1
2
3
4
5 KM

Fig. 1.—Combined Plans.

like Crete and Amyclai, where the Geometric style was derivative rather than self-evolved, but it probably abandoned Protogeometric [5a] for Geometric pottery before Crete did, though patterns derived from the local Protogeometric vases lingered on.

The ' Agora '.

In the area west of the earlier excavation we found the remains of two buildings and traces of a third. The uppermost, Wall or Building 21, was solidly built; we found the foundations of two sides, part of a third, and a gate. In the inside was a layer of tiles, then a pavement of rough cobbles, and almost no dating material in or above it. We have therefore called the building, the ' Agora ', and from the absence of sherds above, it must have been laid down after the temple was forgotten. Immediately under the ' Agora ' pavement along the South Wall (Wall 21 on the plan) we found a few bronze dedications and some Orientalising pottery, but a much thinner deposit than that on the south of Wall 21.[6] The observations recorded by Miss Lorimer coincide so completely with ours, that there is no doubt that the pavement she encountered was what we called the ' Agora ' pavement, though she gives it a different date.[7]

When the Early Geometric Corinthians first called at Aetos, they probably found Protogeometric vases still in use, and some of these vases may even have reached the shrine. How else did one of the few complete Protogeometric vases come to lie above a Protocorinthian [8] pin?

A Possible Temple Wall.[9]

PLATE 40, *a*. Wall 21 is proceeding west, and Wall 27 is jutting out a little on the right below it. In the foreground is the north face of Wall 21, and there was a mass of loose fallen stones on the south. We removed these (PLATE 40, *b*), and recovered the south face of the lower wall, Wall 27, but the stones along it were no longer loose, they were more or less integrated as if they had fallen off it (PLATE 40, *c*). Directly under them we found what we took to be the temple treasure, ivories, amber, and bronzes. Lower than this again, and to the south, is the hearth (PLATE 40, *d*) in the foreground; part of the fallen wall above still remains.

We found an area of fallen tiles all along the inside of Wall 21. There was a gate on the west side (PLATE 40, *e*). On the north side of Wall 27 there was an upper pavement (PLATE 40, *f*), which we connected with the Agora, and a lower, which seemed to belong to the period of the hearth (PLATE 40, *g*). The straggly, apsidal line of stone, below the top of Wall 27 may be part of an earlier building, possibly connected with the hearth.

Like Heurtley we found two large, coarse vases [10] in the area, with groups of vases round them, but it is difficult to equate them with his ' Upper Deposit '. In any case it is recorded that the large Middle Geometric oinochoe 886 comes from the same area and depth as eighty ' Corinthian ' sherds.

The area W-W4 (see FIG. 2), on either side of Wall 27, was more or less stratified, Protogeometric and Early Geometric below, Geometric and Orientalising above; but bronze beads and the occasional red Protocorinthian kotyle sherd seemed able to penetrate anywhere. Further south, in area V, little reliance could be placed on stratification. The area VN was one of the richest found. There was an almost solid layer of terracottas 1·90–2·10 m. below BM. The majority of these are dated by R. V. Nicholls to the late sixth and fifth centuries, but they also include 'Artemids' of the fourth century or later. The diligence of J. K. Anderson detected a concentration of Late Corinthian kotylai here at a depth of 2–3 m. which had not been observed by the excavators. There were also iron spear-heads, bronzes, and some ivories. The terracottas, at least, look as if they had been shovelled down the hill when the Agora was levelled. J. M. Cook examined the post-archaic pottery of Aetos, and

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[5a] *Cf.* Desborough, *Protogeometric Pottery* 271 ff.

[6] See next area W, and all the V numbers FIG. 2.

[7] *BSA* XXXIII 36.

[8] The pin is of the same type as R. E 24 (R. pl. 50): it is E 214, PLATE 66.

[9] The plans, FIGS. 1 and 2, were drawn out by Miss Petty from those made by our surveyor Nigel Bruce. Owing to the war interval and his death on operations, the section could not be deciphered. I hope our photographs will explain our story.

[10] The term ' pithos ' as used in both excavations is conventional. Part of one is extant, probably Heurtley's ' Pithos A ', and is an amphora. See his drawing, *BSA* XLIII 3, fig. 2. It is possible that Vollgraff dug here. In his notes, which he kindly put at our disposal, he mentions finding pithoi and Geometric sherds in this neighbourhood. See *BCH* XXIX 145 ff.

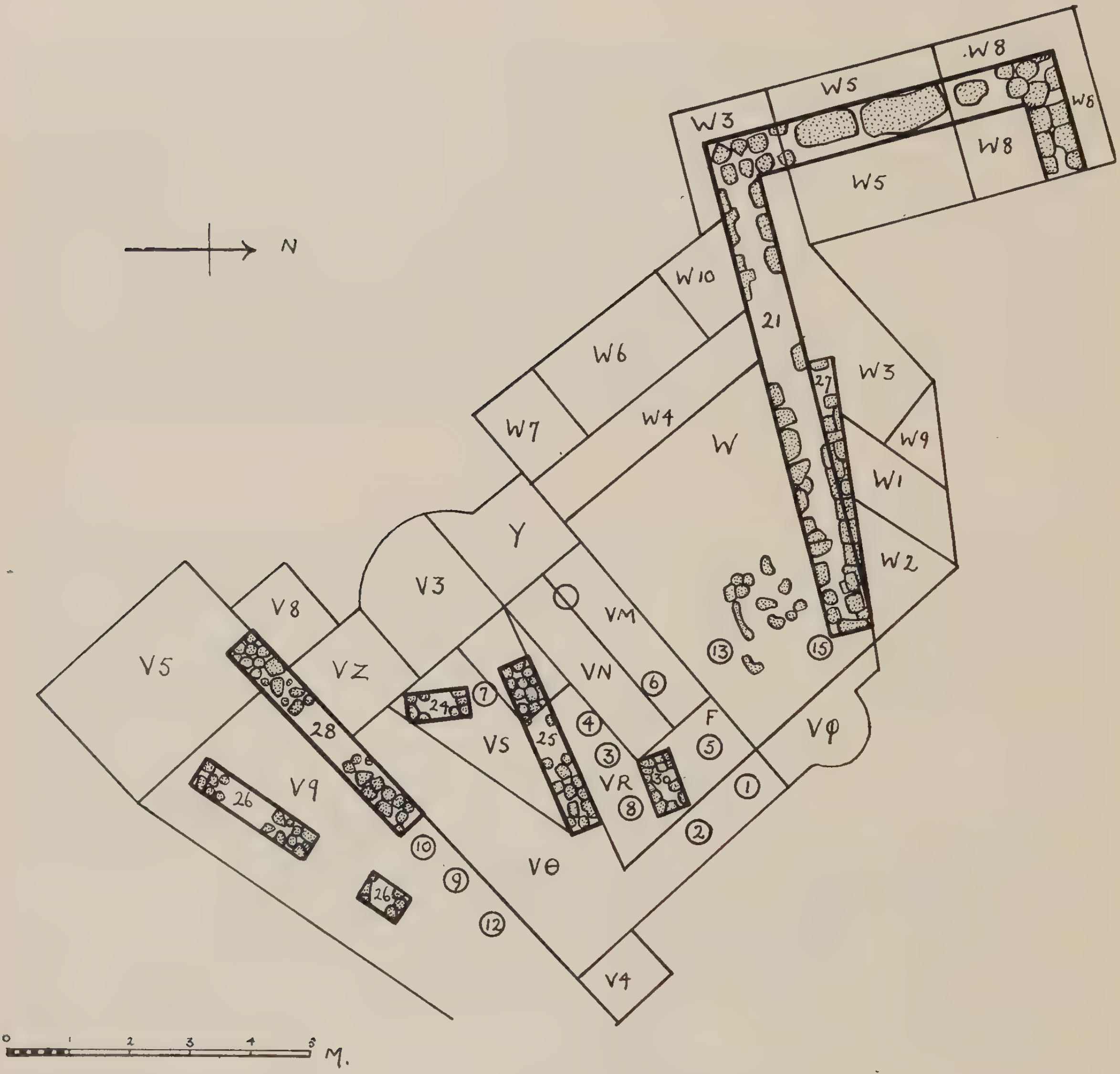

FIG. 2.—PLAN OF FURTHER EXCAVATIONS.

reports that dedications continued until the third–first centuries B.C.; only three of these sherds were from VN.

Heurtley's Lower Deposit.

On rather general grounds Robertson [11] set the closing date of the lower deposit at 775 B.C., which must be too early. Taking the published vases, the latest is R. 158 (R. pl. 10), and if this is out of place, see R. 74, R. 75 (my 846, PLATE 44), which cannot be earlier than 725 B.C. His results are surprisingly consistent, considering the chaotic state of the more western part excavated by me, all chopped up by little bits of walls. Where Robertson has apparently diverged from stratification, *e.g.* R. 331,[12] (my 715, PLATE 45), I find I have returned to it. I also put R. 280 (R. pl. 16) after R. 289, and the R. 280 type is found in both Upper and Lower Deposits. This is also true of Tall Cups,[13] which have been placed at the end of my Geometric series on stylistic grounds. Sir John Beazley's pupils like myself are apt to put style first, but it is nice if stratification goes the same way.

By different ways Heurtley, Robertson,[14] and I seem to have arrived at the same date, 850 B.C., for the arrival of the Corinthians in Ithaca. They date ' Corinthian Geometric ' (H.), ' Protocorinthian Geometric ' (R.), which I call Corinthian Late Geometric, to the ninth century, I to the late eighth; on the other hand, I have detected considerable quantities of the earliest dark-faced ware (Robertson mentions one vase), so happily we all agree on the essential date [15] for the historical event of the Corinthian arrival.

Importance of the Shrine.

I have suggested that the pre-Corinthian buildings were dwelling houses, but it must be conceded that the kraters which Heurtley [16] published were too large and too grand for a crofter's house. Some man of importance lived there, or was it even then the house of a god?

It was already clear from Robertson's publication that the shrine yielded a most unusual amount of pottery. There are more, and more varied, Corinthian Geometric vases in Ithaca than anywhere else. This may be because the Ithacesians were untidy and left their temple dump beside the temple, there being no sea or river handy to remove it painlessly. Even so, the amount of crockery [17] was out of all proportion to the size and importance of this barren little island. Why? Whose shrine was it? A late bowl from the Tower [18] is inscribed Διός, but that may have belonged to any guardsman. There is a sacred marriage scene (R. pl. 46, B 1); is the lady Hera or Penelope? The ivory seals, no doubt, are concerned with fertility, but that tells us little. Vases like R. 530 (R. pl. 38), whether torch-holders [19] or rhytons, must have had a ritual use. G. S. Kirk showed me that if water is poured through them, it makes a nice wide wet circle, which may have appealed to chthonic deities. The only other place where one of these has been found is Delos.[20] There are ' Artemids ' [21] at Aetos like

[11] R. p. 55. He seems to have had qualms later, *ibid.* p. 65 ' from the Lower Deposit and evidently not later than the middle of the eighth century '.

[12] Placed late in his list of kantharoi, but he does call it an early vase (R. p. 65). For R. 289, *cf.* my 615, PLATE 41.

[13] The ' skyphoi ', mentioned by Heurtley *BSA* XLIII 6, are my ' Tall Cups '. One is marked ' pithos ' by Heurtley, which means that it is from the Upper Deposit. It has lines all down, and pattern like 639, PLATE 41; it is unbroken except for a handle. See pp. 271 ff. below.

[14] Heurtley *BSA* XXXIII 65; Robertson *BSA* XLIII 55. I see R. later (*ibid.* 123) suggests ' early ninth century '.

[15] T. J. Dunbabin no longer wishes to lower this date as in *JHS* LXVIII 65; see *Fasti Arch.* IV 168, no. 1670.

[16] See *op. cit.* *Cf.* also the jug P. 146 (my FIG. 6).

[17] I have photographed and drawn sections of all open vases. It is impossible to publish all the material, but notebooks and albums will be available.

[18] See *BSA* XXXIII, pl. 1, west of the road.

[19] Surely not ' candlesticks ', see p. 328 below. See 1036 for Herakles and the Keryneian deer.

[20] In the Artemision, see n. 503.

[21] *BSA* XXXIX 43.

one at Polis, which bore an inscription to Odysseus.[22] The richness of the shrine must depend on Western colonisation: Apollo must have been concerned, and no doubt Odysseus too, but in what way or how much, we cannot know. In this connection I should mention a few iron arrow-heads and many iron spear-heads. There may have been one pair of bronze greaves; there were no bronze weapons, and no bronze tripods, but Heurtley reported clay tripods from the ' Cairns '.[23]

Lastly, I should like to call attention to the prevalence of amber. Robertson records some (R. pl. 48), we add a little more, but the soil was full of it; little of it could be preserved.

CORINTHIAN GEOMETRIC AND ORIENTALISING POTTERY

Corinthian Geometric.

My sequel to Professor M. Robertson's catalogue, written nearly twenty years after the inception of the work, inevitably arrives at different conclusions, but even where I differ most, I am conscious how much I owe to the order he first brought into the mountain of chaotic material which confronted him. He has most kindly read this paper.

Friis Johansen assumed that fine globular aryballoi [24] were being made 50–100 years before the time of their appearance in the western colonies. This may have been a reasonable assumption when there was little earlier material available, but Payne [25] saw that this period must be reduced. There was only one group of Early Corinthian Geometric pottery available when Payne wrote *Necrocorinthia*, but even so he recognised it for what it was. Not much more had been found when Robertson wrote his catalogue, but since then many cases in the Corinth Museum have been filled with the fabric. Furthermore, a parallel series of Early Attic Geometric grave groups in the Kerameikos and in the Agora at Athens are available for study. There is so much of this Early Geometric pottery that it is likely to have lasted a long time.

There is little technical difference between Early and Middle (Weinberg's ' Late ') Corinthian Geometric. The fabric is still heavy, variation in colour is rare, perhaps accidental, and both periods are essentially dark-faced. There is slightly more reserved space and some new patterns, notably chevrons and vertical wavy lines. From the material now before us at Corinth, Perachora, and Ithaca, it is clear that these are characteristic of Corinth throughout the eighth century, an early appearance being Weinberg's ' dinner-set '. [26] The fact that this kind of vertical wavy line occurs on so many different shapes, in exactly the same way, makes it likely that it was a Corinthian adaptation, if not a Corinthian invention. It occurs on even more shapes in Ithaca; cup, kantharos, krater, pyxis, oinochoe. Blakeway [27] seems to have attributed the pattern to the Cyclades whenever he met it in Sicily or South Italy. It is much more probable that it was exported by the Corinthians. Cycladic vases, in Ithaca at any rate, are few and late.[28]

In Corinth itself the influx of some new patterns from the East, such as birds,[29] stars and leaves, appears to be earlier than the change of colour, but the evidence has not, until now, been conclusive, because of the gap in the Late Geometric sequence at Corinth. However, oinochoai like 885–6 (PLATE 54), have been classified as still Middle Geometric, though they are certainly later than W. 73.

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[22] *BSA* XXXV 55.

[23] *BSA* XXXIII 52, fig. 30, nos. 88 and 95. See also on the metal tripods at Polis, *BSA* XXXV 52 ff. They may have been connected with games or an oracle. There are also bronze horses from the shrine at Aetos which have a sporting look, see *JHS* LXX, pl. V, and E. 190 ff., p. 348 below.

[24] *VS* 185. It was probably a short-lived product, made for export.

[25] *PV* 20. See R. p. 54.

[26] W. pl. 12. Vertical wavy lines were used early by the Athenians, Kahane, pl. XX 2, but they were not so popular in Attic Geometric as in Corinthian.

[27] *BSA* XXXIII 181, 200.

[28] For R. 572 (R. pl. 43), which Robertson placed near 800 B.C. (R. p. 97), see under 627 below.

[29] Unpublished, in Corinth Museum. See under 886 below.

I accept Weinberg's hypothesis that the change in what he calls Late (here styled Middle) Corinthian Geometric [30] occurred about 750 B.C., and that it was partly a by-product of colonial expansion. At Corinth there is more variety in colour earlier than in Ithaca, where there is little to correspond to the brilliant scarlet on one side of W. 73. On the other hand, the golden-brown found on globular aryballoi, and common on Corinthian Late Geometric vases in Ithaca, is not found in Corinth. In Ithaca variety in colour is certainly deliberate before the old light-on-dark system gives way to a more equal distribution of decoration, *e.g.* in the early kotylai,[31] which are often scarlet. The change cannot have happened too long before the seventh century because of some hang-overs.[32]

It is possible that both birds and a band of metopes [33] round the middle started earlier in Corinth than in Athens, though the latter is foreshadowed earlier in Athens; [34] but it might be said that the vertical wavy lines round the middle of W. 73 are in metopes. The hall-mark of the Corinthian bird is its crest, corresponding to the raised wing of Attic and Cretan birds. Metopes on the shoulders of Corinthian oinochoai are all Late Geometric. Another early pattern at Corinth is the single tangential circle [35] with a dot in the middle. The krater 789 (PLATE 48) is certainly Middle Geometric in technique, and I have a recollection, though no note, of this pattern round the middle of an early vase in Corinth Museum. It becomes common on the rims of open vases, and its later developments are particularly connected with the Cyclades, but they are not confined to that region.

A new shape (the kotyle), new colours, and new patterns (birds, leaves and stars) began at Corinth before decoration spread all over, and before the onset of very fine painting. The new patterns are of oriental origin, but still strictly subordinated to the Geometric system. Their arrival elsewhere in Greece is less easy to date, but if oriental influence had long been current in other parts, is it likely that Corinth would have sprung so quickly into the forefront of the orientalising movement?

The sequence of the various Geometric styles has now been generally agreed, but more caution is required in the practice of logically dividing the sequence into equal chronological periods by style alone, and without, if not against, stratigraphical evidence. Several styles may be current together.[36]

Kahane [37] is more or less in agreement with Cook,[38] who dates Corinthian and Attic 'Wire Birds' and the like on kotylai a little before and, I would stress, also after 700 B.C. Kahane [39] dates an Attic vase with 'Birds on Parade' twenty-five years earlier, which would bring the arrival of hatched single birds into the first half of the eighth century, where we have placed them.

Robertson has stressed the historical importance of the Corinthian influence in Ithaca. It can now be added that there was a westward movement of earlier material than even

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[30] My system fits in with Dunbabin's (*JHS* LXVIII 68), except that my Late Geometric overlaps with Orientalising, a term I use for Protocorinthian where I can.

[31] See no. 666, PLATE 42. For names used for vase-shapes see p. 271.

[32] W. 130; Young, *Hesperia* Suppl. II 96, fig. 67, Grave XX 7.

[33] *E.g.* 886, PLATES 51 and 54: R. 63 (R. pls. 3 and 5).

[34] *E.g.* Kahane, pl. XVIII 2. His pl. XXIII 3 may be earlier than he says.

[35] Kahane pl. XXII 4 must be earlier than his XXII 3. The former has an earlier base, the latter has inscribed tangential circles. All the vases quoted are probably earlier than R. 567 (R. pl. 43). See n. 277 below on R. 59 (R. pl. 4). This pattern seems to be earlier than the running spiral on Corinthian vases.

[36] How many styles are to be seen on one shelf in one pottery store at Mycenae? See Papadimitriou-Petsas, in *PAE* 1950, 203 ff.

[37] *AJA* XLIV 464 ff.

[38] *BSA* XLII 151. See also p. 279 below.

[39] *Op. cit.* 482, 478; Athens NM 771; Hampe, *Sagenbilder* pl. 32.

Blakeway supposed, though there is yet little archaeological evidence that it went beyond Ithaca. It began in the middle of the ninth century, perhaps earlier. Aetos does not teach us much that is new about Corinthian Early Geometric, but it can make additions to our knowledge of Middle Geometric vases, *e.g.* the big oinochoai 881, 882 (PLATE 54) some fine kraters 787–91 [40] (PLATE 48), and the series of high-handled kantharoi, nos. 717–24 (FIG. 12), which are certainly Corinthian. The Aetos evidence makes it more likely that those found at Perachora [41] are Corinthian and not Argive as Payne suggested. The earliest high-handled kantharoi found at Delos [42] are either Corinthian, or under strong Corinthian influence.

The chief contribution of the Aetos excavation to knowledge is that it can now supply the vase-shapes of the period between Middle Geometric and Protocorinthian, that is to say Corinthian Late Geometric. At the same time it has emerged that large vases continued to be made in geometric style,[43] or something very near it, till the middle of the seventh century: so we have at last filled that old blank. It is inevitable that large vases in common use could not be painted as finely as globular aryballoi; so the mere presence of coarse geometric painting on a vase, or part of a vase, should no longer be accepted as proof of a ninth-century date.

The evidence for this conclusion is set out in detail in the historical sketch of each vase shape and in the text of the catalogue. It is not new; Robertson suggested it, but he paid it small attention only, and it is not noticed elsewhere. It depends partly on the material actually found at Corinth, which enables us to claim much more Aetos material as Corinthian. Coarse geometric painting occurs on the same vase [44] with orientalising features and with fine linear painting.

Of course it may be that the Corinthians had every kind of vase decoration at the same time and used them indiscriminately; or the ascertainable sequence, as known for aryballoi and kotylai,[45] may apply to other shapes as well; in fact, the Corinthians may have had dinner-sets.

After the three- or four-rhythm bands of reserved lines visible on the large vases of Weinberg's 'dinner-set' (W. pl. 12), the following stages are suggested with approximate earliest dates.

750 B.C.	Dark half-way down.	*passim.*
725 B.C.	Lines all down,[46]	R. 226 (R. pl. 12).
	or	
	One reserved line in dark,	R. 26 (R. pl. 2), R. 138 (R. pl. 9).
	or	
	Few round solid rays.	Cumae, pl. XXX.
700 B.C.	Many solid, short rays.	R. 161 (R. pl. 9).
	Thick and thin lines.	R. 171 (R. pl. 10), R. 236 (R. pl. 12).
680 B.C.	Few long rays, or double rays.	694 (PLATE 42).
670 B.C.	Many short, pointed rays.	W. 137, W. 133.[46a]
	Many long rays.	

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[40] *Cf.* the fine new Corinthian Geometric kraters and kantharoi (of which Mr. Amandry kindly sent me an early photograph), *BCH* LXXIV, pl. XXXIX.

[41] *Perachora* I 61, pl. 13, 8 and 9, and pl. 123, 1 and 2.

[42] *Délos* XV, pl. XXIX 50 and 51. See below pp. 285 ff. Homann-Wedeking has reversed the figures of Cycladic and Corinthian sherds in the 'lowest layers in Ithaca'. Homann-Wedeking's figures: Corinthian, none, Cycladic, '*eine erstaunliche Menge*' (*Grossplastik* 160, n. 60); Robertson's figures: Corinthian 46, Cycladic 2; my figures: Early and Middle Corinthian Geometric, over 50 numbers representing hundreds of vases; no Cycladic before 750 B.C. Homann-Wedeking must be confusing Ithaca with Al Mina (Robertson, *JHS* 1940, 2 ff).

[43] Robertson calls these 'sub-geometric' (*e.g.* R. 467, p. 110); confusing because the word has a rather different meaning for Johansen. Robertson considers them Ithacan, and places them in the eighth century. This leaves the seventh century still without big vases, and makes such motives as rays, dicing, and even birds, occur in Ithaca before they are known in Corinth.

[44] *E.g.* the oinochoai 927 and 948 (FIG. 27), also 930, 930*a* (FIG. 21), R. 467 (R. pl. 31).

[45] See especially the history of cups, pp. 271 ff. below.

[46] Attica may have had these considerably earlier.

[46a] W. 133 is, of course, much later, though its group is said to belong to the end of the eighth century. Some aryballoi with pointed rays may be earlier than 670 B.C.

There is only one vase with solid rays at the base at Cumae,[47] which can be eighth century, and it may be that all are seventh century. At any rate no other kind of ray should be pre-seventh century. In the same way most globular aryballoi do not have lines all down. This dating will only hold good for Corinthian pottery, and these rules are not always kept even at Corinth: dark glazed vases can be made at any time, and Corinth had a particular liking for near-monochrome [48] about 700 B.C.

In almost all shapes an elongating tendency can be seen from about the middle of the Late Geometric period onwards; it gives us the tall kotylai, tall cups, tall kantharoi, some with very high handles, tall pyxides with very high knobbed lids; taller necks on the tall-necked oinochoai, slim forms like 925 (PLATE 55) and the ovoid aryballos; while the Ithacesians appear to have experimented more freely than before with high feet. *Cf.* also the very high foot of the krater from Thebes.[49]

A good many more pyxides have been fitted with their lids, and the lekane can be traced back to the eighth century.

The decoration of handles [50] gives an indication of date. Horizontal handles start glazed, go on to bars between lines, then dots between lines, then lines only. In the seventh century [51] all the reconstructed Corinthian Orientalising closed vases have barred handles. R. 171 (R. pl. 10) is one of the earliest ornamental handles (bands of vertical wavy lines) in Ithaca: [52] Middle Geometric kantharoi have verticals and horizontals, but this scheme is not found at Aetos in other shapes till the Late Geometric period.

Note on Corinthian Use of Outline.

Robertson speaks as if silhouette preceded outline (R. p. 56), but at Corinth the earliest Geometric motives, meander and zig-zag, are outline, and when birds were first introduced, R. 63 (R. pl. 3) and 886 (PLATE 51), they too are in outline: silhouette birds are later and tend to be more conventional. Animals, chiefly stags, appear later, but they too at first are only in partial silhouette, and the outline drawing in R. 30 (R. fig. 6) and R. 235 (R. fig. 35) is surely a retention of the old technique alongside the orientalising. *Cf.* the treatment of ornaments: hatched meanders may be early, solid are late.

Corinthian Orientalising.

By Orientalising vases I mean those with features of the Cumae group: vegetable motives, serpents, solid rays, and solid leaves. Some of these may overlap into the eighth century, but they are commonest in the seventh. I date and name vases by their latest features, and some vases are hauled over the boundary by orientalising features in their neighbours. For instance, all the 'Jazz' oinochoai have been placed by the petals on the neck of 940 (FIGS. 23 and 24). This policy avoids the term 'sub-geometric', which tends to focus on unessentials. R. 456 (R. pls. 30, 31), for instance, has black-figure birds [53] and long rays, and both clay and drawing look perfectly Corinthian to me. At last we have a large Protocorinthian vase, perhaps a hydria because of the distinctive breaking up of the decoration in the middle of the neck. If it is not Corinthian it will not be earlier than its Corinthian models. Black-figure meander-hooks fit in better with seventh than with eighth century fashions. Many other large Protocorinthian vases are mentioned in my catalogue: many have dotted loops,[54] a new Protocorinthian motive.

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[47] *MA* XXII, pl. XXX. Not all has been published. Robertson points out that R. 52 (R. pl. 4 and fig. 12) with similar rays, is second black-figure style.

[48] *VS*, pl. IX 2. This date is too low (forthcoming evidence from Old Smyrna).

[49] *VS*, pl. I 2.

[50] See on kotylai p. 279.

[51] Attic handles do not follow this sequence, and it must be expected that there may be exceptions in Corinth too.

[52] *Cf.* W. 32.

[53] *Cf.* Cumae pls. XLIII 4, XLVI 4.

The other two most important vases for seventh century dating are the kotyle 694 (R. 30), and the conical oinochoe 1015, PLATE 56 (R. 209). The shape of 694 (PLATE 42) places it at the acme of tall, fine, red kotylai and its date has been given by Robertson, on the style of the figure drawing (R. fig. 6), as the first quarter of the seventh century: it has double rays. Beside it, at the acme of the fine linear style, stands 1015, taking with it Robertson's 490 group, his ' fine ' group, plates [55] and Ithacan tall-necked oinochoai. The coexistence of two different styles, the precise and the loose, is undeniable, as they occur on the same vase: precise cross-hatched diamonds on the neck of the oinochoe 927 (FIG. 27), groups of loose wavy lines on the shoulder. It probably depends how hard the multiple brush may be.

After the period of the fine red kotylai there supervened a period of sturdy black and white kotylai,[56] and something like a black and white style in other shapes too. Robertson's flat lid R. 399 [57] (R. pl. 23) will belong, and some other fragments 855–7, the plate 1063 and the oinochoe neck 967. A thick sealing-wax red [58] ware is likely to be contemporary.

To Robertson's account of ' Corinthian ' pottery, I would add Mr. Anderson's discovery of a dump of Late Corinthian kotylai in VN [59] and VS.

A word about the effect of the suggested scheme of dating on Italian Geometric pottery. The purpose of Corinth's expeditions to Ithaca, marked by Early and Middle Geometric pots, should be Western expansion, and there is now some evidence for precolonials in Italy and Sicily. As Corinth, for all her strong orientalism, continued using coarse Geometric painting, it is not safe to assume, as Åkerström [60] does, that all coarse painting must be earlier than fine painting just because it is clumsy. Except at some Corinthian centres like Cumae and Syracuse,[61] nearly all Geometric vases in Italy and Sicily are imitations of Greek vases, not imports. Even the vases published as Protocorinthian from Punta del Tonno [62] are not imports: the shapes are not right, and the painting is simplified.[63] One motive is picked out from many and painted larger.

Cross-hatched diamonds [64] round the middle of an amphora in Canale [65] show a similar simplification of cross-hatched diamonds which have a Corinthian look. They appear on Corinthian tall cups [66] and Late Geometric oinochoai, and as a filling ornament of snakes [67] on Corinthian vases in Ithaca, contemporary with vases at Cumae. Why should the derivatives be taken to be earlier than vases at Cumae,[68] which must be more closely associated with the prototypes in Ithaca.

The tall cup from Falerii [69] may not be Corinthian. The paint is thin and dull, though the style of painting is exactly parallel with much Corinthian material [70] in Ithaca. I agree with Dunbabin that the Tarquinii oinochoe [71] is not an import from Corinth: for a Corinthian prototype see 971 [72] (PLATE 62). Other Italic borrowings from Corinth may be the small bulbous oinochoai [73] in the metope style. If the Corinthians, who could paint finely when they pleased, used coarse painting till the middle of the seventh century, how long did coarse painting go on in Canale and in Etruria? Blakeway's dating and many of his attributions must be altered, but we still go on using the historical method he first applied to Italian Geometric vases.

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[54] See p. 307 below.

[55] See below, p. 333. If the acme of fine linear painting at Corinth is about 675 B.C., it is unlikely to have reached Ithaca in the second quarter of the eighth century; see Robertson, p. 52.

[56] See p. 280.

[57] A fragment of it was found in Nucleus 15. Its diameter is 0·122 m.

[58] See nos. 808, 966, 1022.

[59] See p. 258.

[60] Åkerström 146.

[61] On Syracusan kraters see p. 295 below. Add Falerii, Ischia, Thapsos, Modica, Lentini, Megara, Taranto.

[62] Δρᾶγμα *M. P. Nilsson*, 461.

[63] See below, pp. 307, 327. The little jug is closer to Protogeometric models in Kephallenia than to Protocorinthian vases.

[64] On my use of the word ' diamonds ', see n. 391 below.

[65] Åkerström, pl. 9, 9. Of course diamonds are common in many styles, but these detached ones are close to those on the vases in Ithaca cited below. The shape of these clumsy amphorae in Italy recalls Protogeometric amphorai in Kephallenia (e.g. *AE* 1932, pl. 7).

[66] 644 FIG. 7; 899 PLATE 57.

[67] 930a PLATE 57.

[68] Cumae, pl. 36, 3, itself a derivative vase and found in grave 32 with Late Geometric vases. It has orientalising features.

[69] *JRS* XXV, pl. XXI 63. Åkerström 53. Certainly imported Greek and the earliest in Italy except one in Ischia.

[70] See 650 (FIG. 7), and R. 1 (R. pl. 1) for the pattern. It is quite unlike dark-based seventh century tall cups, to which Åkerström compares it. See below on 650, 679, 727, and contrast 653 (FIG. 7).

New Corinthian material at Ithaca and elsewhere will enable more like it to be detected in Thera, so that the graves there will look less like general pottery stores. Vases in Grave 47,[74] for instance, are probably all Corinthian or Theran, and not Cretan. Other instances will be quoted in the catalogue. Kraikers's [75] claim of ninth-century Argive pottery on Aegina is not well substantiated. Argos was no great innovator, she tagged along behind Athens. Crete, too, was much more backward than Payne supposed, and she had little contact with Ithaca. Robertson showed early connections with East Greece, and I like to think that one vase is Chiot,[76] and that Homer may have dedicated it.

Professor Hawkes called my attention to the importance of the dinoi in Ithaca, which imitate metal types with interlocking handles, and to their relation to the British types listed by Leeds.[77] The dinoi are 806–808 and R. 383; see also the stand R. 225: here we may have a trade route up the channel of Ithaca from Lake Van to Scotland. Robertson's bronze sphinx (R. E. 5, R. pl. 49) belongs to this sequence, and so does a new miniature bronze E. 208 (PLATE 66), which is clearly a dinos with lions' heads on the rim. Incidentally this last gives the clue to the ' amulets ' at Chauchitsa.[78] They must be of Greek and not Hallstatt ancestry, even though the Macedonians gave them ducks' heads instead of lions' or griffins' heads. On other early bronze vases in Ithaca and Etruria, see below.[79]

ITHACAN POTTERY

Robertson's attribution of many vases to Ithaca was only tentative, and, as he expected, new discoveries, especially at Corinth, have reduced their numbers. Early local pottery of the time of the Corinthian dark-faced wares is so fragmentary and in such bad condition that it has hardly been possible to record any of it. Even R. 414, 415 (R. pl. 27) are probably later than they look. So we are left with the Ithacan red fabric, all of which shows Late [80] Geometric characteristics, which are not likely to have been invented in Ithaca. There may even be a time lag.

Pottery in Ithacan ' Red Technique '.

The clay is reddish, most of the paint is magenta, and the general effect is not unlike Attic Late Geometric, but there are few if any possible imports from Attica. The colour varies considerably. There is a brown variety which sometimes approaches Corinthian in the colour of the paint, *e.g.* 744 (PLATE 46), and of course Corinthian clay can be very red.

Details that distinguish these vases from Corinthian ones are clumsy angular shapes, wide monochrome handles, seldom barred, often otherwise decorated. Robertson has discussed patterns and dinner-sets of the Geometric period. There is an amusing parallel to the quarter circles on 736 (FIG. 11), in Papadimitriou's new Mycenaean pottery store which he allows me to quote.[81] Our 802 has exact parallels in Protogeometric [82] technique. The pot-hooks may be debased spirals, like the Corinthian ' C's ' and ' S's ' [83] on tall cups.

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[71] Åkerström, pl. 19, 1. [72] See also p. 331. [73] See on 908–10. On metope style see p. 261.

[74] *AM* 1903, 51. [75] Kraiker, *Aigina* p. 12, pls. 4–6; pl. 5, 108. [76] 1069 (FIG. 15).

[77] *Archaeologia* LXXX 1 ff.; see also *PPS* XVIII 237; Kunze, *Kretische Bronzereliefs* 267 ff., *Festschrift Reinecke* 96 ff.; Hawkes, forthcoming. On swivel handles, see below p. 296. On shapes of bronze vases, see p. 341.

[78] Casson, *BSA* XXVI, pl. V. [79] See p. 341. Milojčic, *AA* 1948/9, 11 ff., fig. 3, 22. See below, E 208.

[80] See on kantharoi, p. 285 below. On the oinochoe R. 432 see below p. 306. There are some early local Geometric oinochoai 876–80.

Robertson based his account of Ithacan pottery on the high-handled kantharoi, which he derived from the Cyclades. As Corinthian Middle Geometric high-handled kantharoi have been found in Ithaca,[84] Corinth is a more likely source. There are, of course, early high-handled kantharoi at Delos,[85] but evidence from Ithaca and Perachora makes it probable that these are either Corinthian, or under strong Corinthian influence. Even on later Ithacan kantharoi like R. 313 (R. pl. 20) Corinthian influence is strong; the scheme of decoration at the foot is Corinthian like the oinochoe R. 171 (R. pl. 10); both that and the shape are like the kantharos 763 (PLATE 45) with Corinthian orientalising patterns (R. 330, R. pl. 20). Also the rim patterns of so many of these kantharoi are ' running dogs ' like W. 116, not the Cycladic tangential circles.

Other Ithacan vase fabrics.

Robertson linked his kraters R. 362 and R. 363 (R. pl. 24) with the cups R. 280–284 (R. pl. 16), the latter having pale clay (R. p. 105). In fact, both the orange paint and the clay of R. 280, 363 might be Corinthian. Our 660 (FIG. 8) is exactly like R. 280 [86] except that the colour of the paint is greenish grey, but still Corinthian-looking. The style looks sub-Mycenaean, and I was much shaken by finding two whole cups in and around my Pithos 1. The stratification of Pithos 1 proved to be unreliable, and there is a close parallel to the shape of 660, including the upright handles, in W. 119 at the end of the eighth century. There are two late parallels at Corinth itself,[87] and if Corinth can use sub-Mycenaean shapes in the Orientalising period, no doubt Ithaca did too, or even imported them. It is a relief to find some possibly local pottery later than 675 B.C.

J. M. Cook suggests that the kantharos 773 (FIG. 11) may be sixth century. There are bits of many others like it, and R. 287 (R. pl. 16) would go with it on grounds of fabric. There are also some bits of big bulbous oinochoai with added white round the middle, and the group R. 433–6 (R. pl. 29), which are all uncovenanted. There are many dark glaze mugs whose date we have left open. Some of these fabrics may be contemporary with Mr. Cook's fifth and fourth century black glaze.

Robertson has dealt fully with the Orientalising and tall-necked oinochoai,[88] some of which are in red technique: they have no ancestors, no descendants, and no companions; not a vase that could stand on the same table with them. Are they special ritual [89] vessels? We have too many of these in Ithaca already.

We have added to the fine series of plates. More of these may be Corinthian. All are probably seventh century.

One fact is still unexplained. Of all the fabrics called Ithacan at Aetos, the ' undated ' kantharoi alone can be traced at Polis. Otherwise Geometric to sixth-century Corinthian is the only fabric common to both shrines.

It is curious that the Ithacesians did not use the Corinthian [90] alphabet.

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[81] See *PAE* 1950, 223.

[82] *BSA* XXXIII, pl. 4, 43. For 802, see *JHS* LXX 9.

[83] See 649, 652 (FIG. 8).

[84] See 717 (FIG. 8), also pp. 285, 288 ff. On the Corinthian origin of vertical wavy lines, see p. 260. There is an unpublished kantharos at Corinth KP 172.

[85] *Délos* XV, pl. XXIX 50, 51. *Cf.* the dots and wavy lines on 50 with those on W. 73.

[86] For a discussion of the line in a panel and turned-up toes, see below pp. 296–7.

[87] W. 119 and W. 135. On cups and kraters see below pp. 271, 294.

[88] On conical oinochoai, see p. 322.

[89] See below on rhytons p. 328 and ring-vases p. 329.

[90] See R. pp. 82, 89. Contrast E. Homann-Wedeking, *Die Anfänge der griechischen Grossplastik* 52.

THE CATALOGUE OF VASES

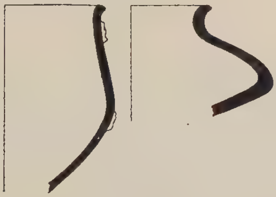
The scheme of cataloguing is that of my predecessors, only slightly modified. To start a new one would have been too confusing. The chief modifications are:

(1) A separate catalogue for two Mycenaean vases.

(2) I have tried to present a chronological order, and I have not made a separate catalogue for Corinthian and Ithacan. I do not feel as confident as Professor M. Robertson did that it is always possible to separate vases made by a Corinthian working in Ithaca from those made by him in Corinth. My numbers follow those of my predecessors, Mr. Heurtley and Professor M. Robertson. I refer to Heurtley's numbers as H., to Robertson's as R.; my Protogeometric numbers are preceded by P.

TWO MYCENAEAN VASES

Though I still maintain that no sherd from the ' Cairn ' area must be L.H. III, there are so many Mycenaean shapes from the excavation that it would be strange if none of the fragments was Mycenaean. It would also be strange if the very fertile district of H. Georgiou were ever quite free of crofters and shepherds. Two rather miserable fragments from the shrine are listed here. It is not suggested that there was a Mycenaean shrine. They are the sort of vase fragments that crofters and shepherds might leave behind them.


3

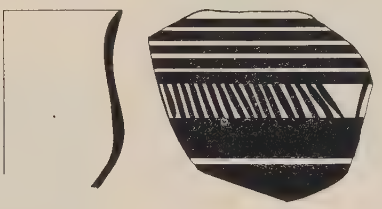

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Fig. 3.—Sections of Mycenaean Vases (Myk. 1–2). (Scale 1 : 4.)
Fig. 4.—Sections of Protogeometric Vases (P.135, P.144). (Scale 1 : 4.)

Myk. 1. FIG. 3. Kylix-rim, handle indicated. D. 0·12 m. Buff clay; traces of black paint on a line inside, and also on the body outside. The shape is that of Zygouries kylikes, perhaps of the thirteenth century. VH 2·19 m.

Myk. 2. FIG. 3. Half an alabastron; very worn and rough; mark of a handle; traces of red paint. VH 3·65 m.

PROTOGEOMETRIC POTTERY

Heurtley [91] has dealt thoroughly with this fabric. Since he wrote I have given my own revised [92] dating of Polis pottery. Desborough [93] mentioned a Protogeometric vase of Attic style at Aetos (H. 84). A sherd from my excavation joined it from W4, 2·10 m., showing the continuity of the two areas. The glaze on the body is finer than that of most other Aetos Protogeometric pottery, and I believe it to be an import from Attica. It takes with it H. 73 on grounds of clay, though H. 73 may be later.

A bulbous bronze pin was found at Aetos,[94] and bulbous monster pins were found in the Kerameikos at Athens.[95] Huge bronze pins were also found in tomb A, pit 3 at Diakata [96] in Kephallenia, along with vases very close to pottery at Aetos.[97] Tomb B at Diakata contained the flat, square-hilted slashing swords which I have compared to the sword-hilt found at Pelynt [98] in Cornwall. The cross-hatched triangles on the only painted vase [99] published from Tomb B are close to Protogeometric patterns at Aetos,[100] Polis, and Athens. I do not doubt that the vases in Diakata, just off the trade route, are contemporary with Ithacan Protogeometric, though their style is still almost Mycenaean. There is a case for an early trade-route up the channel of Ithaca from Athens and Delphi. The Woodhouse [101] sword is not unlike a sword found at Delphi: [102] Desborough tells me that a neck like R. 413 (R. pl. 27) has been found at Delphi, and I have myself seen pottery from Delphi with that remarkable fabric: thin, hard, blood-red biscuit, and metallic paint. On R. 381 (R. pl. 23) see p. 296 below.

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[91] *BSA* XXXIII 37 ff. H. 84 is mentioned on p. 51.

[92] *BSA* XXXIX 1 ff. for Polis, and *BSA* XLIV 307 ff.

[93] *BSA* XLIII 269. *Protogeometric Pottery* 272. Surely he exaggerates the difficulty of travel. What Corinthian Protogeometric there is appears to be an offshoot of the Attic style. Those two styles are indistinguishable at the beginning of the Geometric period, when there is contact between Corinth and Ithaca. See 872 below.

[94] *BSA* XXXIII 61, no. 117.

[95] *Kerameikos* IV, pl. 39.

[96] *ADelt* V 117, fig. 32.

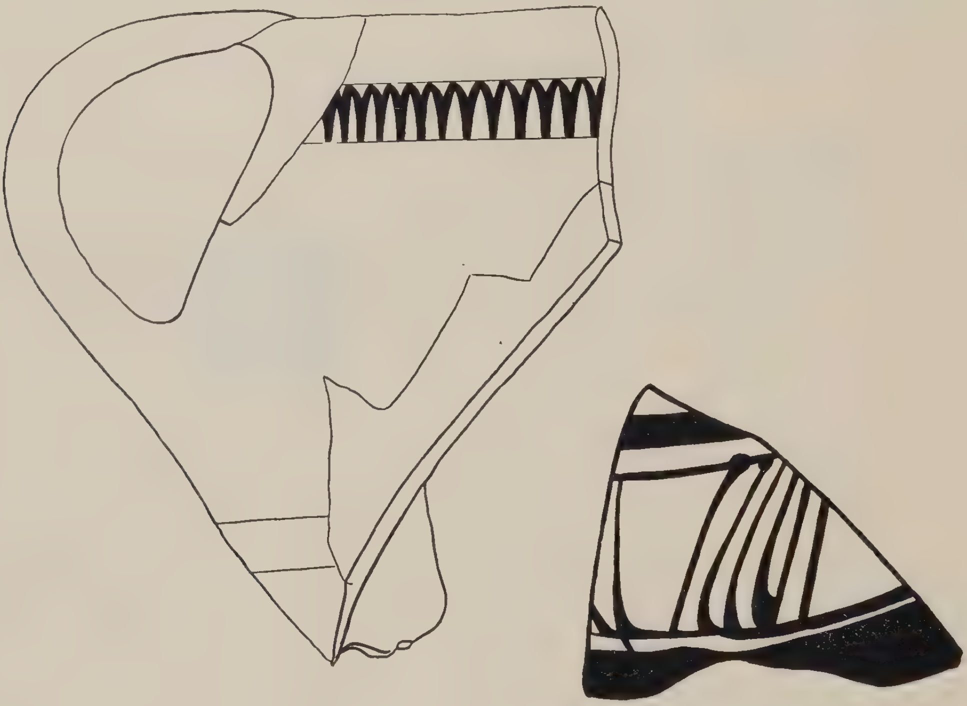
P.131 P.141

Fig. 5.—Protogeometric Patterns.

CUPS AND KANTHAROI

P.130. FIG. 6. Middle of a drinking-vessel. Red clay; dull, black paint, white slip. Overlapping concentric circles; reserved line below. Inner circle drawn by hand. W2, 2·20 m.

P.131. FIG. 5. Rim and spreading vertical handle. D. 0·13 m. Yellow clay, brown paint. Zig-zag on rim. W4, 2·00 m.

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[97] See p. 325 and p. 327 below.

[98] *Proceedings of the Prehistoric Society* (*PPS*) (1951), 95; see also my note *ibid.* XVIII 237.

[99] *ADelt* V 111, fig. 27, 4.

[100] *BSA* XXXIII 47, no. 73; for Polis see *BSA* XXXIX, pl. 6, nos. 25 and 26; for Athens, *Kerameikos* I, pl. 62, Inv. 559.

[101] There was a tradition in Ithaca that a sword was found in a grave below our site towards Pisaetos. Vischer says de Bosset gave Woodhouse a sword from Ithaca. It may be the Woodhouse sword in the British Museum (see *BSA* XXIX 114), with a flat blade and hooked guards.

[102] *FdD* V 8.

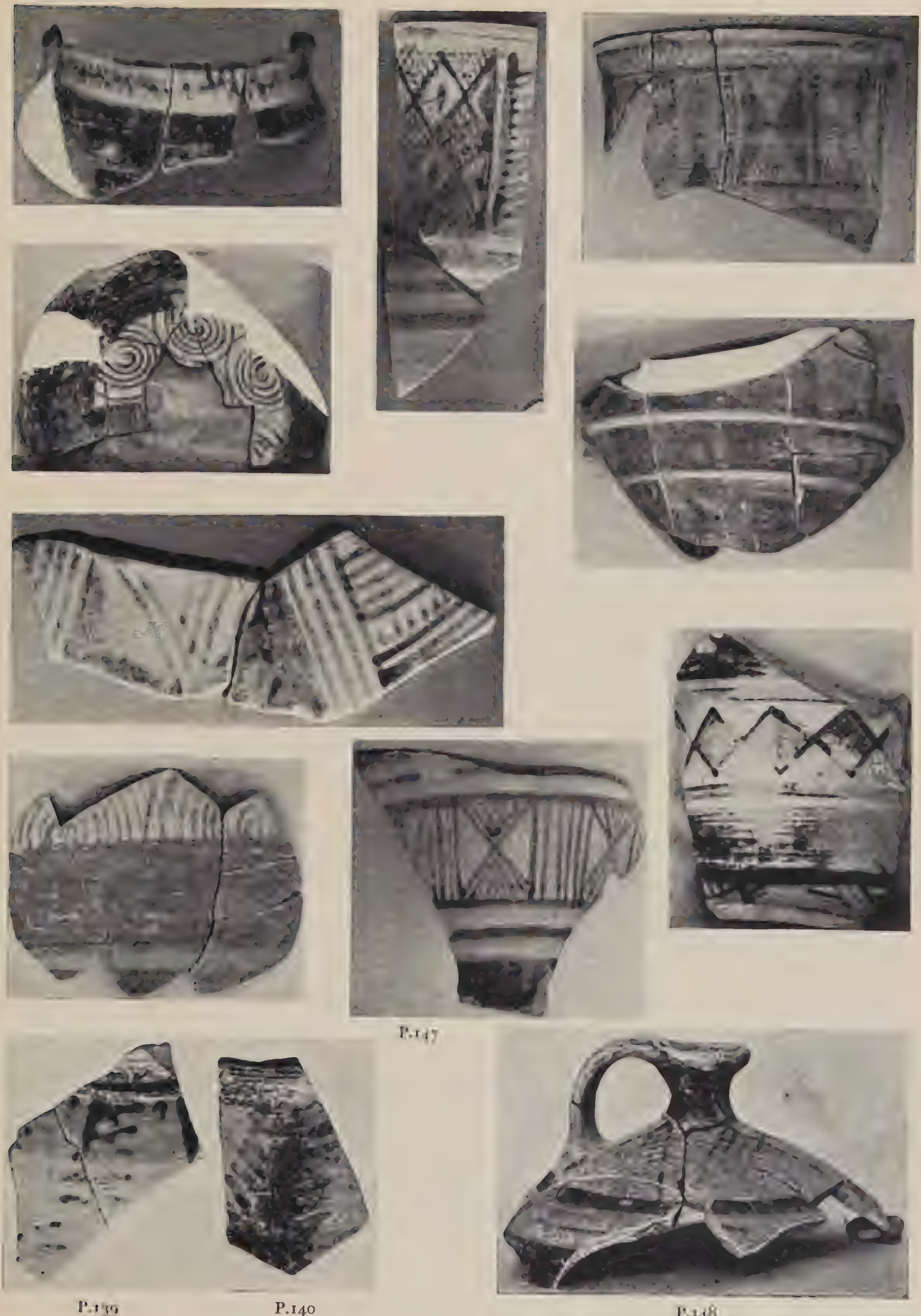
P.132
P.134
P.136
.142
P.13
145
P.14
130
P.147
P.139
P.140
P.148

FIG. 6.—PROTOGEOMETRIC SHERDS. (SCALE 1 : 1.)

P.132. FIG. 6. Half a kantharos rim, marks of two round vertical handles. D. 0·90 m. Clay, bluish; paint has a purple tinge. Zig-zag on the rim. Hearth and V8.

P.133. Rim and vertical handle. D. 0·13 m. Worn, yellow clay. Decoration, vertical strokes. VY 3·05 m.

P.134. FIG. 6. Rim. D. 0·12. Yellow clay, yellow and black point; good condition. Complicated pattern; [103] two, perhaps three, reserved lines. It is uncertain if the lower fragment belongs. In black earth, south of Wall 27.

P.135. FIG. 4. Rim. Pale clay, purple paint; monochrome. Near hearth. W 2·20 m.

KRATERS

P.136. FIG. 6. Rim. D. 0·188 m. White clay, poor paint. Double-axes between verticals [104] and a line of dots.

P.137. FIG. 6. Lower part of a large krater [105] with vertical handles. Thick fabric, bluish paint. It narrows rapidly, and no doubt it ended in a high foot. It may belong to P. 136.

P.138. Rim. Buff clay, yellow paint. Zig-zag.[106] Under Wall 27, 1·80–2·00 m.

POURING VASES

P.139. FIG. 6. Spring of a jug neck. Pink clay, very white slip. Vertical zig-zags between uprights; fillet round the neck. VH 2·00 m. Another similar fragment, probably of the same vase, was found beside the hearth. W 2·21 m.

P.140. FIG. 6. Similar fragment. Darker clay, no slip. Decoration, hairs from a line.[107] V8 2·65–3·15 m.

P.141. FIG. 5. Spring of a jug neck with a groove. Pink clay, white slip. Groups of straggling lines at an angle. Dark below. VN 3–3·25 m.

P.142. FIG. 6. Shoulder of a wide-bellied jug (R. 470). Four concentric circles, blob of paint not in the centre; the two outside lines are probably compass-drawn, the others hand-drawn.[108]

P.143. PLATE 59. Oinochoe. Pre-geometric would be a more convenient category for the neck R. 468 (R. p. 78), to which a gourd-like body with eight plastic ribs has been added. According to Payne,[109] ribbed bodies were made in Crete both in Middle Minoan and in Protogeometric times. The clay is bright red, looks foreign, and may easily be Cretan. The paint is flaky black. Eight pieces of another ribbed vase were found, two of them in my excavation in the Temple deposit (VN 2·45 m., VZ 2·75 m.). The clay of these is smooth and pale yellow, the paint red to brown. The period of these vases is probably just before, or at the beginning of, the Geometric era. The original home of ribbed vases was Cyprus, which produced them at intervals from the Middle Bronze Age to the fourth century B.C. The strands of the handle are looser than on the Protogeometric handle H. 78. There are several twisted handles from the excavation, but only one scrap can be connected with one unimportant little juglet. There is no parallel for the neck.

P.144. FIG. 4. Two sherds from the shoulder of an oinochoe, or perhaps of a pyxis. Clay, pink; white slip, black paint. The lines are thick and clumsy. Disintegrating zig-zags do occur in Proto- and Early Geometric vases in Ithaca, but this looks primitive. Nucleus 15, 3·30–4·00 m.

P.145. FIG. 6. Another bit of shoulder, just below the neck. Clay, yellowish; paint, poor. The pattern [110] looks as if someone were experimenting with rays and Protogeometric patterns in a confused manner. Nucleus 15, 3–3·20 m.

P.146. FIG. 6. Neck of an enormous jug, found in the ‘ Cairns ’. Clay and colouring are very like that of the two vases just mentioned. The decoration on the shoulder is popular on Protogeometric jug-necks in Ithaca, but it dies out [111] before the end of the period.

P.147. FIG. 6. Neck of a round-mouthed jug (or high base). Clay much the same as the last; paint duller. The elements of this decoration are common in Ithacan Protogeometric. This seems a little tidier, but not very much.

H.84.[112] Another piece of this lekythos was found which joins the others. The black glaze on the body of this vase is fine. It looks like an import from Athens. If so, it takes with it the other lekythos H. 73, which has similar clay.[113] W4, 2·10 m.

P.148. FIG. 6. Top of an aryballos.[114] Clay rather like Minyan. Two thin lines between two thick lines on shoulder. It may be Geometric. W 1·70 m.

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[103] *Cf.* Marinatos, *AE* 1932, pl. 4, 5a from Lakkithra.

[104] Cf. *AE* 1932, pl. 10, 149, from Lakkithra; Kyparissis, *ADelt* V 103, fig. 18, from Diakata (both in Kephallenia). The vase in fig. 18 comes from Pit 3, where the Protogeometric pins (fig. 32) and the spiral fibula (fig. 33) were found. Both the Kephallenian and the Ithacan patterns are no doubt descended from patterns like Wace, *Chamber Tombs*, pl. LVI 2 (L.H.I-II), pl. XLI, 316 (L.H.I.), but both have gone a long way.

[105] *Cf.* the lower part of *ADelt* V 103, and also of *AE* 1932, pl. 5, 13. Such reserved lines on the base are not found on Mycenaean vases.

[106] *Cf.* P. 132.

[107] For the decoration *cf.* the neck of a jug from Diakata (*ADelt* V 108, fig. 24, 2), from the same grave as the krater mentioned above, but from a different pit.

[108] *Cf.* H. 54, *BSA* XXXIII 45.

[109] *BSA* XXIX, pl. IX 6; 251, nos. 88, 89. The vase from Palaikastro there mentioned has been published by Hutchinson, *BSA* XL, pl. 14 f. It has a cut-away neck, but need not for that cause be Minoan. The neck of Payne's vase really belongs to that body.

[110] *Cf.* H. 76, *BSA* XXXIII 49. Our sherd may not be Protogeometric.

[111] But see 981, FIG. 14.

[112] *BSA* XXXIII 51.

[113] It may be later. See V. Desborough, *Protogeometric Pottery*, pl. 37.

[114] There is an aryballos with similar cross-hatched triangles, in the technique, labelled Protogeometric in the Ashmolean Museum (1936.424–5). Here is another link between Attica and Ithaca.

GEOMETRIC AND ORIENTALISING POTTERY

Shapes of Drinking Vessels

I use the following:

Cup :	Loop handles, modulated rim.
Kotyle :	Loop handles, straight rim; sometimes large.
Kantharos :	Two vertical handles, modulated rim; there is generally some kind of base; may be large.
Mug :	One vertical handle, flat base, and modulated rim.
Kyathos :	One or two flattish, vertical handles; straight rim.

The mug may be a dipper, and not really a drinking vessel, although it is painted inside. Its history is obscured, if vases like R. 352, 354 (R. pl. 22) are called mugs.[115] They develop from kantharoi like our 710 (PLATE 45). They, too, would make good dippers.

CUPS

Early Geometric Cups

The earliest Geometric drinking vessels at Corinth [116] and Athens are small round bowls with a variety of handles, and a nick in the rim.[117] At Athens the rim soon stretched out and developed an offset; at Corinth [118] the nicked rim hung on alongside other shapes, and grew larger and thinner, until it turned into the kotyle rim. These vases are difficult to date, but cups like 615 seem early; they are low and thick, with a thick rim.

I have listed 619 early on grounds of technique. It is heavy ware, with a good glaze; it is probably imported. The shape is rather clumsy, but it is derived from the Mycenaean ‘ deep bowl ’ shape. It is rather shallow. The rims of monochrome cups in Ithaca are generally not barred. Handles are monochrome at first.

Middle Geometric Cups

Cups differing from Weinberg's in size only, 621–4, 626, have been placed here. 621 is listed as Middle, not Early, on account of its large size and also because it shows a kind of cork-screw marbling effect achieved by the brush; a technique which is popular on later vases. Vertical, wavy lines and chevrons are counted as Middle Geometric patterns; the cups without vertical bounding lines to the chevrons are probably earlier than Weinberg's example (W. 75). They have a kind of bolster round the handle which Ithacesians seized with joy, and they made great play with it on local kantharoi, hence Robertson's ‘ Sausage Style ’.

Of these cups some have a nick, *e.g.* 624, and some have a distinct rim, *e.g.* 622, 623 The latest Middle Geometric cups in Ithaca have barred handles.[119]

Corinthian chevrons are generally rounder and more solid than Attic.

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[115] For R. 356 see below p. 327.

[116] *Cf.* W. 21, 39–45, 68, 80.

[117] Kraiker calls a mug with this rim Late Protogeometric (*Aigina* 25, pl. I 21). *Cf.* also *Tiryns* I, pl. XVIII 4.

[118] Cf. *Perachora* I, pl. 11, 1; also R. 289 (R. pl. 16).

[119] Attic handles show much more variety than Corinthian Geometric handles. In particular, Attic early cups have horizontal stripes on the handle. At Corinth barred handles start in Early Geometric times, *e.g.* W. 61; *cf.* also W. 75.

Late Geometric Cups

Round Cups

The cup R. 10 (R. pl. 2) and the kotyle 666 (PLATE 42) have just the pattern [120] and the body-shape of the cup 624. Their paint is red and their fabric finer, so I believe them to stand at the head of the new movement.

Our cup 628 (PLATE 41; R. 14, R. pl. 1), parallel in pattern to the kotyle R. 15 (R. pl. 2), but with a wider panel, may be a little later. The bird cups and kotylai also come after the earliest chevron kotylai like 666 (PLATE 42); they have the same technique, but a wider border, more decorated space, and a new kind of bird: instead of the old outline goose (886, PLATE 51) the birds are more conventional and mostly silhouette. A new note is struck in the long-legged heron (630).

The kotyle 667 (PLATE 42) is in heavy fabric, but it gives the first sign of a taller, slimmer body, and so it heralds the advent of the Tall Kotyle. It is significant that its pattern is painted more precisely, just like the Tall Cup 641.

Round cups have barred handles. R. 285 (R. pl. 16) is just the shape of 628 (R. 14), and is probably Corinthian, but later, in the last quarter of the eighth century. The meander hooks are rather long, but this often happens to this pattern on Corinthian Late Geometric vases (*e.g.* 650, FIG. 7). For the base pattern, *cf.* the oinochoe R. 171 (R. pl. 10), and many aryballoi.

Tall Cups

So far I have followed Weinberg pretty closely, but now I must do without him. He publishes no Tall Cup until W. 157,[121] which is obviously seventh century.

There are no Tall Cups in Early or Middle Geometric technique. In Ithaca none have the earliest chevron pattern of W. 75; so the only course open is to place them all in the Late Geometric period.[122] In spite of their numbers at Ithaca, the shape shows little development. The decoration of Tall Cups, like that of kotylai, started on the upper half of the vase (*cf.* R. 1 and 639), and jumped to the bottom (no gradation between 639 and 641). The shape started after the ' window in the dark ' had been abandoned, and nearly all have the new range of patterns, and when they have friezes, they are broken friezes. The bulk of those with lines all down should be dated in the last quarter of the eighth century. The old way of dealing with the Tall Cups was to put them all in the pre-kotyle period: some said ninth century. Robertson has shown that the kotyle developed ' well in the Geometric period ', and also that some cups are parallel with kotylai. He thought, however, that the Tall Cup died out in the eighth century. The truth probably is that while egg-shell kotylai were all right for the dead—before the Ithaca finds our supply came mostly from graves—your solid toper needed a more solid vessel, and a pretty heavy cup went right through, though traces of fine painting [123] may often be seen on them. Complete Tall Cups have been found both in Heurtley's Upper [124] and Lower deposits, so they should date about the change over, by my scheme 725 B.C. There is such close technical agreement between the kotyle 679 (PLATE 42), with meander hooks and

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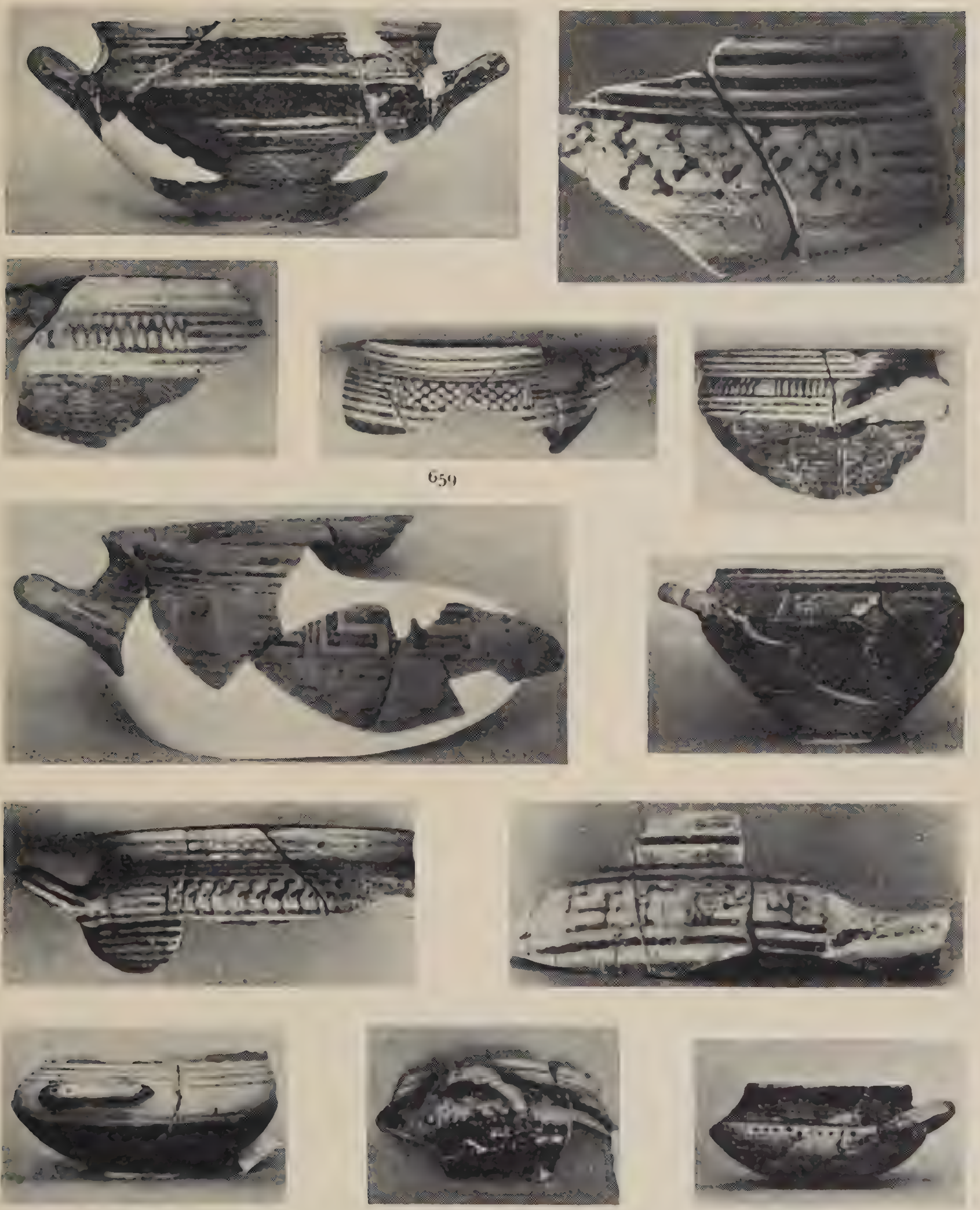
[120] R. 15 (R. pl. 2) is a kotyle, not a cup. Robertson remarked this resemblance of cup to kotyle.

[121] *Cf.* R. 286 (R. pl. 16), which is certainly Corinthian. R. 1 (R. pl. 1) might be Middle Geometric, but I think spirals are a Late Geometric pattern. R. 1 is certainly earlier in style than R. 2–4; its section is like the upper row (Vallet and Villard, *BCH* LXXVI 335, fig. 9b), and should be earlier than the lower row of R. 2–4 type.

[122] Weinberg places the Falerii tall cup with his dark-faced group (*AJA* XLV 32), before the middle of the eighth century. Is it perhaps from Chalkis?

[123] *E.g.* the meander and spiral on R. 4 (R. pl. 1) are done with a fine, hard brush.

[124] See p. 259. There is generally a difference of fifty years between Robertson's dates for Geometric pottery and mine. Nothing will reconcile us over the Tall Cups. He puts them before the first kotylai, I put them all after.



619 644

637 659 651

650 653

658 657

662 663 664

Fig. 7.—Cups. (Scale : 619, 629, 644 (2 : 3) ; 657, 658, 659 (2 : 5) ; 653 (1 : 4) ; rest (1 : 3).)

T

lines all down, and many Tall Cups, that they must be contemporary, and the kotylai will not be far from 700 B.C.: *cf.* also the kantharos 727 (PLATE 45).

There is grave difficulty in making lines all down the vase, like 641, suddenly appear on Tall Cups a century earlier than on globular aryballoi, oinochoai, and kotylai: or the rare, queer, globular aryballos would have to last a century.

The Tall Cup shape in its extreme form has a barbarous un-Greek look with its high centre of gravity, almost as if it developed in some outlying district, still subject to Mycenaean influence. Note that Weinberg suggested Aegina as a centre for a Corinthianising type of vase, not found at Corinth. Aegina would not be a good centre for these cups, considering their prevalence in Ithaca and Delphi, and their occurrence in Italy.[125] The shape is characterised by clumsy [126] handles and unmodulated feet. These last are also found on the other vase-shapes with lines all down: 679, 727, and the jazz oinochoe 935, which must be dated about 700 B.C. The shape is probably influenced by the slimming movement which produced Tall Kotylai, and this also fixes the date. Moreover, there are things close to 'Wire Birds' on Tall Cups.[127]

There are two systems of decoration in Tall Cups: (*a*) A 'window' in the middle of lines, and (*b*) frieze all the way round. As the friezes are all disintegrating, and the patterns in the 'windows' are generally unbroken, I have listed the former first, without supposing them to be necessarily all earlier. Class (*b*) Tall Cups sometimes have bars on the handle, and they never have lines all down. Class (*a*) Tall Cups always have horizontal lines on the handles like late kotylai: their rims never have bars, but they often have reserved lines inside, *e.g.* 634, 658, 650, like late kyathoi.

In Delphi two Tall Cups and a pouring vessel with lines all the way down [128] were found with a Middle Geometric krater and kantharos, but these vases were found a metre above the constructions to which the excavator attributed them, and there is an Attic Late Geometric pitcher among them. I have not seen the globular vase with pierced lugs also found in this deposit, but it does not look like Iron Age pottery. At any rate the deposit is not homogeneous.

Orientalising Cups

It is still uncertain when the seventh-century cup developed its off-set, probably somewhere in the late eighth century, see 651, 653. Some late-looking cups have barred handles.

The evidence of kraters [129] has moved the cups 660, 661 from the beginning to the end of the series, and the reserved frieze on 660 finds itself beside the reserved frieze on 662. Such a position accords well with such stratigraphic evidence as can be offered. Both the complete vases (660, 661) were found in or about Pithos 1, in VN with some earlier vases,[130] but in the same layer as the dump of Late Corinthian kotylai. Rims of both these cup shapes occur in Heurtley's Upper and Lower Deposit, so they, too, should date from the change over. The cup R. 286 (R. pl. 16) is close to *VS* pl. IX 4, but probably a little earlier. It belongs to the series of Tall Cups with friezes: no doubt it is Corinthian. The small cup R. 288 (R. pl. 16) is certainly Corinthian; *cf.* our 663 or W. 157.

The brown glaze cup R. 287 (R. pl. 16) would fit in well with the kantharos 773 (FIG. 11), on grounds of fabric, and with other possible sixth-century vases of doubtful provenience.

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[125] The Falerii cup, see above p. 264. Tall cups are now being found at many sites in Sicily, Modica, Lentini, Thapsos, Megara; and also in Ischia.

[126] See R. 2, 3, 4 (R. figs. 1 and 2); 679 (PLATE 42), 727 (PLATE 45), 935 (FIG. 23).

[127] *E.g.* 656–8.

[128] Amandry, *BCH* LXXIV 322, pl. XXXIX. Dunbabin dates the cup Perachora I, pl. 121, 7 early on stratification.

[129] See pp. 266, 296.

[130] See p. 258. Part of the Early Geometric cup 617 came from my Pithos 1. It may be a survival or out of place.

Early Geometric Cups (Corinthian)

Dark Glaze, Nicked Rims.

613. FIG. 8. Rim with a sharp nick.[131] White clay, thick fabric; good black streaky glaze. Reserved line above the nick.

614. Shape like 615. Rim, spring of handle, part of base. H. 0·07 m. D. 0·12 m., 0·05 m. White Corinthian clay; streaky black glaze. Reserved below handle. Imported. Wall 27,[132] upper layer.

615. PLATE 41. Cup. H. 0·072 m. D. 0·11 m. and 0·05 m. Light clay; better glaze. Reserved line on rim. Imported, and certainly the early lower type of cup.

616. Another. H. 0·075 m. D. 0·116 m., 0·048 m. Similar glaze.

616*a*. Another.[133] H. 0·08 m. D. 0·13 m., 0·048 m. A little later. Red grid below.

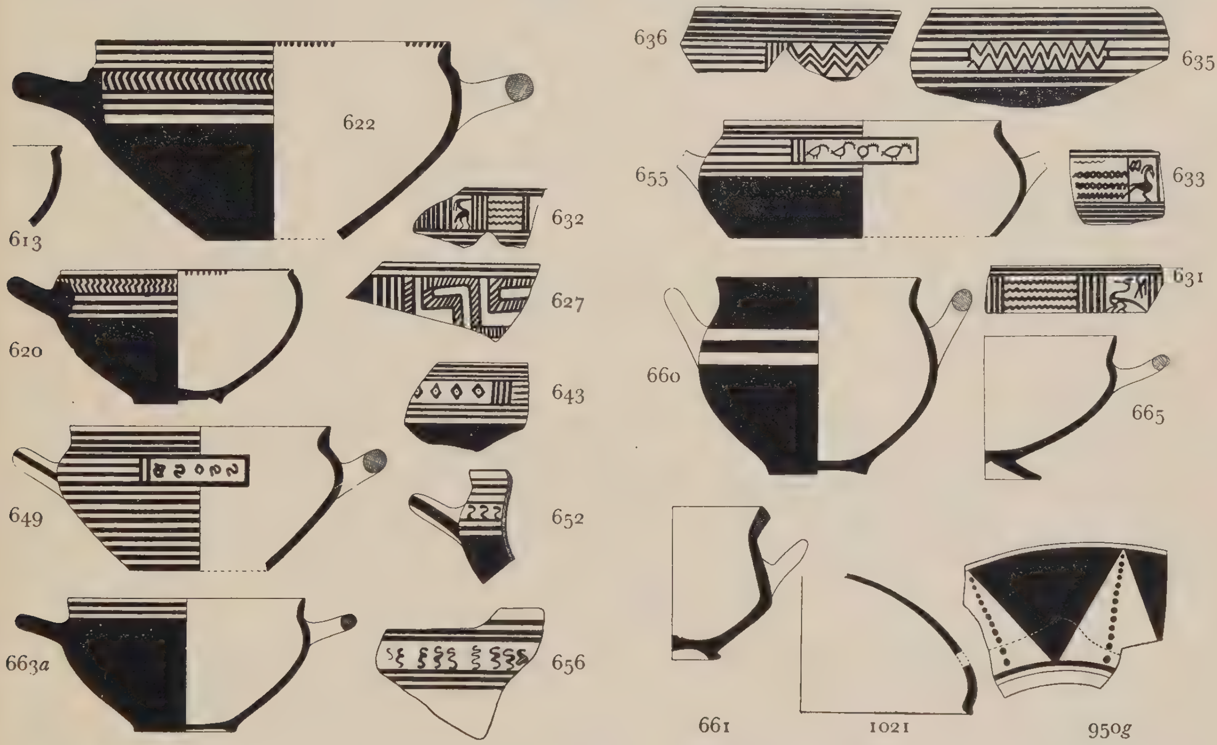

FIG. 8.—CUPS, ETC. (SCALE 1 : 4.)

617. Larger cup. H. 0·086 m. D. 0·154 m., 0·054 m. Pinker clay; dark glaze except below the handles. More modelling on the base. VN 2·90 m., and Pithos 1.[134]

618. Another. H. 0·106 m. D. 0·168 m., 0·054 m. The glaze continues to improve. Note the characteristic Corinthian foot.[135]

Middle Geometric Cups (Corinthian)

619. FIG. 7. Cup with a larger lip.[136] H. 0·083 m. D. 0·135 m., 0·052 m. Clay reddish, good glaze. Broad reserved stripe inside and outside the rim. VΘ 2·25 m.

620. FIG. 8. Small cup. H. 0·071 m. D. 0·12 m., 0·046 m. White clay, fired red below; paint, bright red [137] inside, black outside. Vertical wavy lines, strokes on the rim, red cross below. No trace of another handle. Handle monochrome. W4, 1·20–1·50 m.

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[131] *Cf.* W. p. 19, fig. 6, nos. 68, and 39–43. R. 289 (R. pl. 16) is similar, *cf.* also *Perachora* I, pl. 11.

[132] On the stratification see pp. 255 ff.

[133] *Cf.* a late vase of this shape in Thera, *AM* XXVIII Beil. XX, c 79 from tomb 82 (63) (see on 882 below) with white stamped circles; of course not Cretan.

[134] On the stratification, see pp. 257 ff.

[135] *Cf.* oinochoe 871.

[136] These cup shapes move away from the kotyle, contrast 624; *cf.* shape of W. 83.

[137] The colours are like those on W. 73.

621. PLATE 41. Large cup. H. 0·116 m. D. 0·20 m., 0·074 m. Buff clay. Nice dark glaze; brown outside, grey inside. Cork-screw effect obtained by slanting the vase during painting.

622. FIG. 8. Part of a large cup. H. *c.* 0·113 m. D. 0·188 m. The base will not join, but a scrap shows that it was like the last. Red clay, brown glaze. Three lines above and below chevrons; rim, slightly off-set below, barred. W1, 1·20 m. From this shape R. 9 (R. pl. 2) and R. 10 developed:[136] they show the influence of fine painting in fabric and style.

623. Piece of similar rim, showing spring of handle. Many similar.

624. PLATE 41. Cup. H. 0·12 m. D. 0·19 m., 0·074 m. Clay, pale; paint, nearly gone. Still the round shape, and a pronounced nick on the rim,[138] which is barred. Four lines at the handle, bars on the handle. Nucleus 12.

625. Half a cup. H. 0·072 m. D. 0·12 m., 0·05 m. Clay, buff; paint, black and red. Follows closely on 620. Thinner fabric, eight lines at the handle. Bars on rim and handle, red mark below.

626. PLATE 41. Rim and part of handle. D. 0·19 m. More lines at the handle. Reddish clay, looks Corinthian. Finer fabric on a bigger bowl. Section approaching that of the earliest kotyle 666. Bars on handle.

Late Geometric Cups (*Corinthian*)

Medium Round Cups with a Nick or an Offset.

Meander.

627. FIG. 41. Bit of rim. Buff clay, thin fabric, no slip. Profile[139] like R. 572 (R. pl. 43); bars on lip. Fine technique. Probably Corinthian.

Tall Wavy Lines.

628. PLATE 41. Cup (R. 14). I figure it again, new-cleaned. The type is now better known.[140] Its shape is round, the lip slightly bent out and barred; it is clearly under the influence of fine painting.

Bird-Cups.

The following are exactly like bird-kotylai and must be contemporary.

629. FIG. 7. Scrap of rim. Buff clay. A tall bird, turning his back on squiggles, may be in outline. Distinctly a cup.[141]

630. PLATE 41. Cup, half the rim and a handle missing. H. 0·11 m. D. 0·16 m., 0·05 m. Buff clay, dark paint. Taller birds than the rest; herons.[142] Dots on handle. V4, 3·25 m.

631. FIG. 8. Bit of rim. D. 0·16 m. Light clay, thick fabric[143] but fine painting. Bird in metope, squiggles.

632. FIG. 8. Similar, finer painting. Red. VM 2·30 m.

633. FIG. 8. Another. Bird in metope, single line squiggles behind. V4, 2·90 m.

The following, slightly slimmer bowl may serve as an introduction to Tall Cups:

Plain Lines.

634. Cup.[144] H. 0·086 m. D. 0·11 m., 0·05 m. Clay reddish, excellent variegated brown glaze. Decoration, eight reserved lines.

There are many cups with similar decoration.

Tall Cups.

Panels on the Shoulder.

I have assumed that any vase with a panel between lines is a Tall Cup. All have horizontal lines on their handles, like Tall Kotylai.

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[138] For shape and decoration, *cf.* Kraiker, *Aigina*, pl. 8, 130.

[139] *Cf.* W. 80. Our vase is later. R. 572 has now got a base that joins. H. 0·12 m. Last quarter of the eighth century.

[140] It has just the wavy lines of W. 107, which I should place in the third quarter of the eighth century; W. 106 and W. 110 are earlier. Same pattern as R. 15, which is a kotyle (R. pl. 2).

[141] *Cf.* the shape of R. 290 (R. pl. 17).

[142] *Cf.* 687 (PLATE 43), also the Ithacan heron-kantharoi R. 314, 315 (R. pl. 20).

[143] *Cf.* R. 290 (pl. 17), which is of very thick fabric.

[144] This type of cup may have started early, but it certainly continued till orientalising times, *cf.* Cumae, pl. XL 5, found with pl. XL 8, which has birds on parade, and also pl. XXXVI 3, with thin, solid rays at the neck, all from tomb XXXII, p. 241. The technique is close to that of many Tall Cups. See also the oinochoe 893 (FIG. 20).

Double and Treble Zig-zags.

Sherds from seven vases, two shown; one is from VN 3·13 m. The shape is not certain, and some panels may not be between lines. 635 might be Middle Geometric,[145] but the colour is not quite right.

635. FIG. 8. Piece of rim. D. 0·14 m. Pale clay, black paint. Point of zig-zags extended in the Corinthian manner;[146] dark below. Imported.

636. FIG. 8. Three pieces of rim and mark of handle. Similar clay, paint worn. Lines probably cover the body.

Tall Single Zig-zag.

637. FIG. 7. Part of rim. D. 0·19 m. Pale clay. Barbaric-looking zig-zag[147] with long points; dark below.

638. Another similar from VH 2·70 m.

Single Short Zig-zags.

639. PLATE 41. Cup. H. 0·102 m. D. 0·14 m. White clay; grey paint. Dark below.

640. Top of another. VΘ 3·10 m.

640*a*. Also another. All dark below. Complete and unbroken except at one handle; marked 'Pithos'.[148]

Vertical Wavy Lines.

641. PLATE 41. Cup; handle missing. H. 0·101 m. D. 0·146 m., 0·056 m. Red clay; good brown-yellow paint. Technique like the kotyle 679 (PLATE 42), and the kantharos 727 (PLATE 45). Section like the last. Wavy lines are regular but rather spindly.[149] This is the pattern of R. 3 and R. 7 (R. pl. 1). There must have been at least twenty vases like this one from Nucleus 15. Last quarter of eighth century.

Superimposed Diamonds.[150]

642. PLATE 41. Rim. Same technique as last.

Detached Dotted Diamonds.

643. FIG. 8. Piece of rim. White clay, thick fabric. Narrow lines, dark below. An orientalising pattern.[151]

Cross-hatched Diamonds.

644. FIG. 7. Rim. Pale clay, good glaze. Dark below. Pattern common on vases at Cumae.[152] VR 2·75 m. Another similar sherd from Nucleus 5, 3·45 m.

Spirals.

645. PLATE 41. Scrap of rim. White clay; fine black paint. Spirals[153] in panel; dark below. Nucleus 15.

645*a*. Another scrap, perhaps from the same vase, W4, 1·85–2·00 m.

646. Similar, larger. The rim overhangs.

647. Part of rim and body. D. 0·16 m. Thick fabric. Narrow lines on the rim; lines all the way down.[154]

Reversed 'S's' (probably derived from spirals).

648. Cup. H. 0·086 m. D. 0·11 m., 0·045 m. The rim has a groove. Poor technique, dark below. For pattern, *cf.* the following. VN, Pithos 1.

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[145] *Cf.* a kantharos at Delphi (see above, n. 40), which certainly looks Middle Geometric. 635 may be from a kantharos. *Cf.* also W. 61.

[146] Weinberg 11 under no. 29, says that 'apices' are characteristic of Corinthian zig-zags on vases.

[147] *Cf.* the zig-zag on an Ithacan tripod-handle, *BSA* XXXV, pl. 13, c, no. 3, and pl. 15, b. Contrast the regular zig-zags on later cut-out Ithacan metal handles, *loc. cit.*, no. 9.

[148] See Heurtley, *BSA* XLIII 6.

[149] *Cf.* also the painting on the heavy rather pointed kotyle 667 (PLATE 42). An exactly similar cup has been found at Delphi, *BCH* LXXIV pl. XXXIX 2. *Cf.* the slightly earlier cup, *MA* VI, pl. IV 19, from Thapsos.

[150] *Cf.* the technique and pattern of the oinochoai 894–7. PLATE 58, FIG. 19. See the kantharos 756 (PLATE 47).

[151] Cumae, pl. XLVII 1. *Cf.* conical oinochoe 1014*a* (FIG. 31).

[152] In chains, *ibid.* pl. XXXVII; detached, pl. XXXVI 3a, with pointed rays at the neck.

[153] *Cf.* the spiral on the neck 1034. For a complete Tall Cup *cf.* R. 1 (R. pl. 1). The spirals in the panel are also like those on the rim of R. 4 (R. pl. 1). 645 must be contemporary with the kantharos in Dresden cited by Robertson, *AA* 1892, 162, no. 24. *Cf.* a vase from Modica (unpublished).

[154] *Cf.* the spirals on the neck of the big oinochoe with lines all the way down, *PV* pl. 2. It also is Late Geometric. It has a row of birds in silhouette.

649. FIG. 8. Most of the rim. D. 0·136 m. Reddish clay, yellow paint. Lines down the body. There are six other vases with this pattern;[155] in three others the pattern has degenerated into ' c '.

Meander Hooks.

650. FIG. 7. Part of rim and handle. D. 0·20 m. Reddish clay, yellow paint. Small hooks, broad lines. There are parts of more than six vases with this pattern. I figure this one for comparison with the kotyle 679 (PLATE 42), and the kantharos 727[156] (PLATE 45). They are so alike in every way that they must be contemporary.

Friezes on the Shoulder.

651. FIG. 7. Part of rim and handle. D. 0·14 m. Red clay, brown paint. Wavy lines in groups, touching the horizontal lines; barred handles. Parts of many vases of this style, no complete example; but see R. 286 (R. pl. 16), with a slightly more advanced pattern. VN 2·30 m.

652. FIG. 8. Handle and some rim. White clay; bright scarlet paint. ' S's ' touch the handle; dark body, horizontal lines on handle. Nucleus 12, 3·00 m.

653. FIG. 7. Cup, one handle missing. H. 0·102 m. D. 0·13 m., 0·052 m. Brown variegated paint, three reserved lines; dark glaze handles. The extreme form of the tall cup.[157] VZ 3·20 m. Many similar fragments.

654. Similar cup, broken handle. H. 0·054 m. D. 0·075 m., 0·043 m. Buff clay, *miltos* on the foot. Upper deposit. Perhaps Attic. Another similar. Both late eighth century.

Panels.

655. FIG. 8. Part of rim and handle. D. 0·145 m. Light clay. Four crested birds in outline, feeding in a panel between lines. Dark below.

Orientalising Cups (mostly Corinthian)

The following need not be later, but they have definitely late characteristics.

Birds.

656. FIG. 8. Bit of rim. Light clay, worn. Spirals turning into ' wire ' birds;[158] dark below. Corinthian.

657. FIG. 7. Similar. Darker paint. Crested birds, standing on one leg; dark below. Probably Corinthian.

658. FIG. 7. Handle and half rim. D. 0·13 m. Fine lines, probably all the way down; ' wire birds '[159] on one leg, reserved lines inside the rim. Certainly Corinthian. Date about 700 B.C.

Lattice.

659. FIG. 7. Part of rim, handle, and body. Red clay, variegated paint. Thin, off-set rim. Blotchy work, dark below May not be Corinthian.

Lines in a Reserved Space.

660. FIG. 8. Cup.[160] H. 0·106 m. D. 0·106 m., 0·05 m. Pale clay; paint, worn. Exactly like R. 280 (R. pl. 16), except that the paint is grey, not reddish-brown. Looks Corinthian. Pithos 1. Another from VN 2·00 m.

Small Cups.

661. FIG. 8. Small cup. H. 0·08 m. D. 0·09 m., 0·05 m. Red clay, traces of black paint inside and out. Clumsy, ill-made, and thick. It might be of any age; it bears resemblance to Mycenaean rims, feet, and handles, but it is probably late. Not Corinthian. Found inside Pithos 1, VN. Other such rims from VM 2·00 m., and VZ 3·30 m.

662. FIG. 7. Half a cup. H. 0·064 m. D. 0·13 m., 0·08 m. Red clay, red-brown paint. Reserved frieze. Corinthian. VΘ 2·31 m.

663. FIG. 7.[161] Bit of rim and handle. D. 0·12 m. Finest clay and paint. Corinthian. Nucleus 15.

663*a*. FIG. 8. Cup, handle missing. H. 0·072 m. D. 0·12 m., 0·054 m. Dark below fine lines.[162] Corinthian.

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[155] *Cf.* Thera, *AM* XXVIII, pl. XXXIII 3 (K. 28) found in grave 47 with K. 39, which is an orientalising globular aryballos. Dunbabin quotes also Perachora II, pl. 29, 686.

[156] See also the neck 1033 (PLATE 55), and R. 2 (R. pl. 1). The painting of the meander hooks on the cup from Falerii (*JRS* XXV, pl. XXI 63) is like this but quite unlike the next. See note 70.

[157] Cf. *AM* XXVIII, Beil. XI, A 91, at Thera: no doubt Corinthian, as there are so many like it in Ithaca.

[158] Cf. *VS* pl. 2, 1 from Delphi.

[159] *Cf.* kotyle 683 (FIG. 10).

[160] See pp. 266, 296. It goes closely with R. 280 (R. pl. 16), and R. 363 (R. pl. 24).

[161] Shape like W. 157 and R. 288 (R. pl. 16), which is also Corinthian.

[162] A cup like this seems to have inserted itself into Kraiker's hospitable Geometric group (*Aigina*, pl. 8, 129). R. 288 is not very far away.

Dots.

664. FIG. 7. Quarter of a cup. H. 0·06 m. D. 0·12 m., 0·05 m. Brown clay and glaze. Dots. Not Corinthian.[163] VN 2·10 m. Scraps of three other similar rims from Nucleus 15.

Cup on a High Foot.

665. FIG. 8. Cup. H. 0·076 m. D. 0·140 m., 0·06 m. Brown clay and paint. May be East Greek. VN 2·45 m.

KOTYLAI

Robertson discovered that some kotylai are earlier than fine globular aryballoi, but that need not mean that they have an excessively high date; indeed, there are no kotylai in the dark-faced, Early and Middle Geometric technique. Johansen realised that there were two kinds of kotylai, but did not explain the difference plainly; that was left for Robertson.[164] The earlier round kind has not been found in Italy or Sicily:[165] the sequence is plain, but the exact dating must still wait. If we may connect the invention of the kotyle with the change in fabric, its earliest date will be in the second quarter of the eighth century. As stated, the earliest kotylai are taken to be those with the chevrons[166] and the arrangement of Middle Geometric cups (666, PLATE 42). Kotylai with a taller and modified wavy-line pattern (*e.g.* R. 15),[167] or with two birds and squiggles, same shape and technique, but more reserved lines, will come next (668–74); those with outline, less conventional birds, and fewer reserved lines, will be the earlier. The earliest bird, the single, fat, hatched goose (see 886, PLATE 51), does not occur on kotylai. Double-axes had appeared in Middle Geometric on 882; see R. 444 (R. pl. 30); they appear on early kotylai, with or without birds, squiggles, and metopes (676). 'Birds on Parade' are generally found with the earlier shape, Wire Birds with the later, while one or two separate reserved lines appear above the base. J. M. Cook[168] has dated the Wire Birds somewhere about 700 B.C. Besides the delicate Wire Bird kotylai, there are some sturdier vases with vertical wavy lines in panels and a reserved line below (*e.g.* 677, 678). There is also kotyle 679,[169] of an unusual shape for a kotyle, slim below, billowing out above, with lines all the way down and identical in general appearance and technique with the kantharos 727 (PLATE 45), and the cup 650 (FIG. 7).

I have seen no kotyle lips with bars. The decoration of handles is wonderfully consistent. The earliest chevron kotylai have bars on their handles, like the cups of the period, and like Middle Geometric kraters. Bird-kotylai, as Robertson noticed, have dots between horizontal lines.[170] Later ordinary kotylai have horizontal lines only, on their handles, though some of the monsters may have had bars.

Wire Birds are also found on kotylai with long rays[171] touching at the foot. A common shoulder-pattern with long rays is rather feeble wavy lines (as on 702–4). The acme of the fine style, with slender shape and scarlet paint, is found on kotyle R. 30[172] (our 694, PLATE 42), with double rays, which Robertson has dated to the first quarter of the seventh century. As soon as the rays begin to draw apart (703) the fine red colour goes, the shape becomes sturdier, and the fabric, particularly at the base, becomes thicker. Later the lines on the middle give way to solid black, the reserved space[173] is very white, and the wavy lines fade out. This is the end of the Protocorinthian series.

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[163] J. M. Cook suggests that this cup is a non-Corinthian import.

[164] *BSA* XLIII 12.

[165] One scrap of a kotyle rim with chevrons has lately been found by Dr. Buchner in Ischia.

[166] *Cf.* W. 75. See p. 272 above.

[167] Our cup 628 (PLATE 41).

[168] *BSA* XLII 151 ff. See also p. 261 above.

[169] On other large kotylai, see below p. 280.

[170] So do tall pyxides. *Cf.* also Kahane, *AJA* XLIV, pl. XXVIII 1, 2. Note our 685 with a steeper shape, lines all down the body and horizontal lines on the handles.

[171] *VS*, pl. XVII 1.

[172] *BSA* XLIII 15, drawing.

[173] *Cf.* W. 176 and 179. On a Black and White style see above p. 264.

To supplement my illustrations I quote the good kotyle-sequence in R. S. Young's well in the Agora at Athens.[174] It is curious that the earliest type, C.19–21, with dark bases or one or two reserved lines on dark bases, are all Attic imitations. Perhaps it is because they are imitations that he dates them all to the seventh century, and thus close to the Corinthian kotylai with rays (C.8–12). Our 702, which is very small and delicate and a fine red, had round and shorter rays. It belongs to the first quarter of the century, and is a little earlier than C.8, whose rays are like our 699, and still touching at the base. In our 703 the rays are drawing apart and the fine red colour has gone, *cf.* the rays of Young, C.9. All these kotylai have rather weak vertical wavy lines in a panel at the rim, and lines round the middle. Now both panel and lines disappear; the panel becomes dark, or reserved, or dark with a little added white; the middle is dark glaze, and the rays become smaller and smaller. Our 706 certainly belongs to the second half of the seventh century, and C.13 very likely [175] does too; C.14, 15, 16, and still more the imitation C.19, pretty certainly do. The chief indication of a late shape is the wider base, and base-measurements are seldom given.

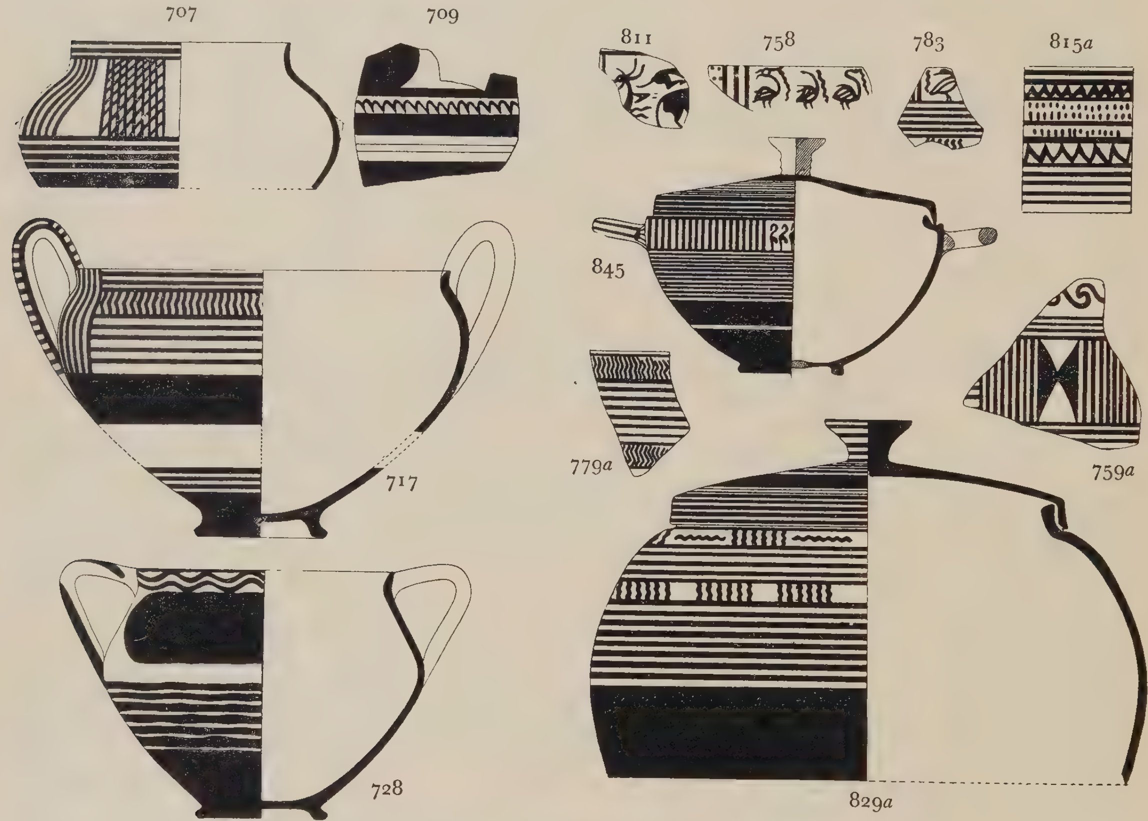

Fig. 9.—Kantharoi, Pyxides, Etc. (Scale 1 : 4.)

There are no kotylai in Ithacan red technique. Of the kotylai listed by Robertson as Ithacan, all are in Corinthian style, and some [176] are, or may be, Corinthian.

A word must be said about large kotylai in Ithaca. Such vases were made in Corinthian orientalising style.[177] The earliest large kotyle in Ithaca is R. 298 (R. pl. 17). It is probably Corinthian; the drawing of its birds is like many of those on R. pl. 3, and the paint is close to that of many large vases now known to be Corinthian. The date is the second half of the eighth century. Next is 679 belonging to the cup-kantharos set, with lines all the way down. It belongs to the last quarter of the eighth century. Then come the large orientalising kotylai 687–91. 690 (R. 301, R. pl. 16) must be Corinthian and it may take with it R. 303 (R. pl. 17), for its loops seem to be painted in Corinthian style, and loops [178] are now known to be a Corinthian pattern. These two vases belong to the second quarter of the seventh century.

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[174] *Hesp.* Suppl. II 144 ff.

[175] *Cf.* W. 162, 'third quarter of the seventh century'.

[176] See R. 298–303 (R. pl. 17).

The accurate dating of kotylai is often important enough to justify its detailed treatment here. It must be stressed that there is still no easy rule-of-thumb, and that decoration must always be taken into account as well as shape.[179]

Late Geometric Kotylai, Dark Bases (*Corinthian*)

The following vases are often red outside and black inside. There were probably hundreds of vases like this.

Chevrons.

Barred handles.

666. PLATE 42. Kotyle. H. 0·108 m. D. 0·164 m., 0·05 m. Corinthian clay; red outside, dark inside. Chevrons [180] between bars; four reserved lines below the panel.

667. PLATE 42. Kotyle. H. 0·11 m. D. 0·168 m., 0·062 m. Red clay, heavy fabric; variegated red and black. Wider panel, modified pattern; more pointed below.[181] The base is unmodulated.

Pairs of Birds.

Dotted handles.

668. PLATE 42. Piece of rim. D. 0·14 m. Red clay; dark-red paint inside, outside lighter. Confronted birds in metopes; two stars. Bird's leg in outline (probably two legs each): they are fat creatures like geese, with big bills. VN 3·00 m.

669. Outline birds and three large squiggles.[182]

670. FIG. 10. Bit of rim belonging to R. 24*b* (R. pl. 3).[183] D. 0·16 m. Buff clay, dark paint. Four squiggles, flanked by a tall hatched bird.

671. FIG. 10. Another. Pale clay, dark paint. Confronted outline birds in a metope.

672. Another. Red paint. Only three squiggles; silhouette bird.

673. FIG. 10. (Detail R. 24 *d*, R. pl. 3) Kotyle, parts of rim missing. H. 0·105 m. D. 0·16 m., 0·05 m. Four squiggles between birds in silhouette. The bird kotylai have more reserved space than 666, the kotyle with chevrons.

674, 5. Two others, one from VZ 3·15 m.

Squiggles and Double Axes.

There are many of these vases.

676. PLATE 43. New photograph of R. 295. May or may not be local.

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[177] *NC* 9, n. 2, pl. 2. On this reconstruction see n. 188.

[178] See below, pp. 307, 315. Dunbabin tells me that he dates dotted loops with the Cumae Group. Surely they should be contemporary with other chain patterns, *e.g.* floral chains, in the seventh century. Certainly the rays of the kotyle 690, PLATE 43, are later than the rays of Cumae, pl. XXX.

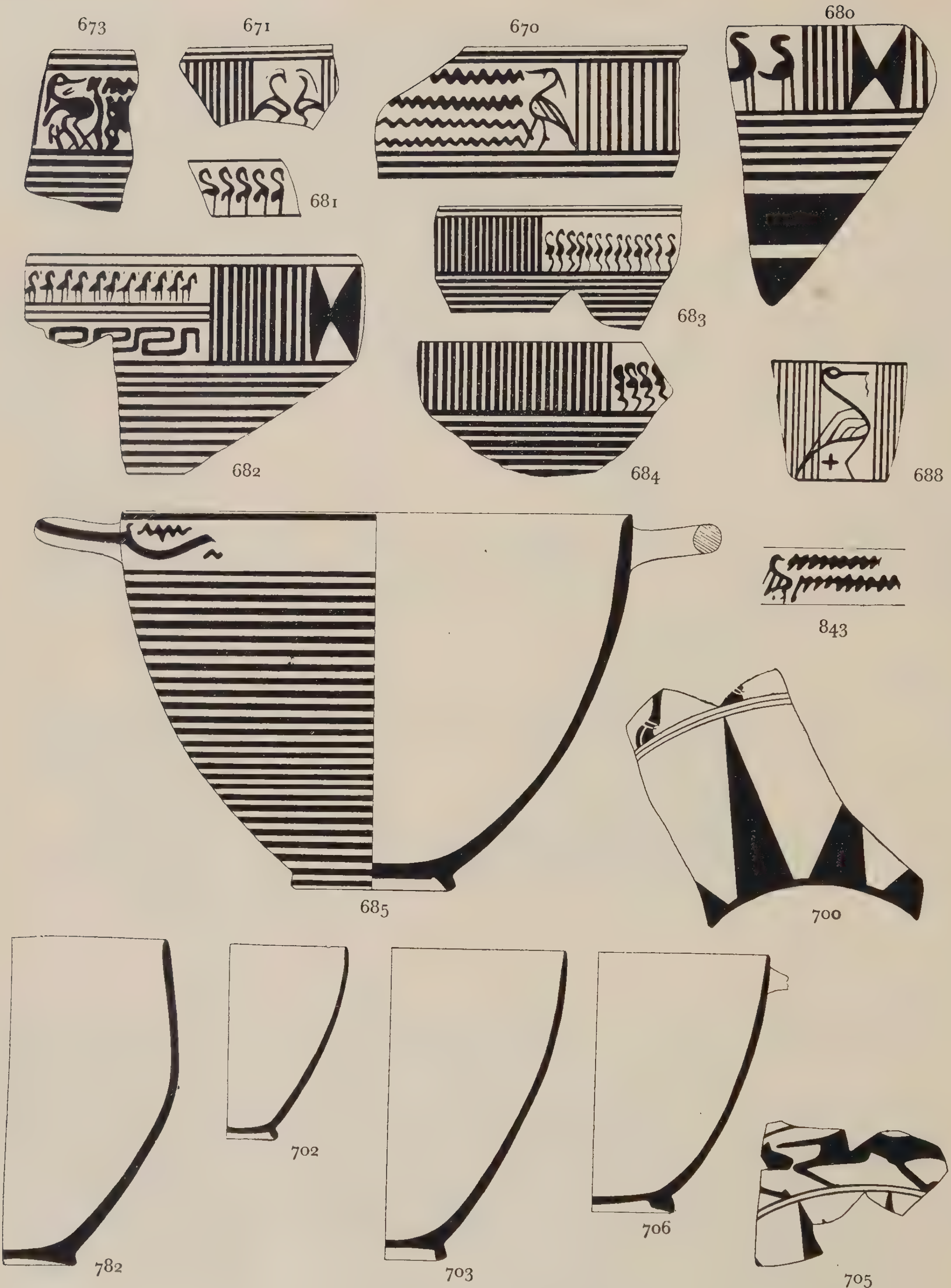
[179] Young in this series tries to date by shape alone, forgetting that the sequence of shapes is a slim shape between two wider shapes. E. H. Dohan (*Italic Tomb Groups* 30, 21, pl. XIV) does the same. She compares her kotyle to a drawing of uncertain shape and obviously different decoration. A Rhodian kotyle of the second half of the seventh century looks much nearer (*Vroulia*, pl. 43, 27, 1a found with pl. 44, 27, which are Late Protocorinthian).

[180] *Cf.* cups 624, 626 (PLATE 41), also the pyxis 825 (PLATE 50), the Small Jug 1029 and the oinochoe 971 (PLATE 62). *Cf.* also *Perachora* I pl. 13, 21.

[181] For pattern and shape *cf.* the Tall Cup 641 (PLATE 41). See p. 274 above. Contrast the elegant foot of 666.

[182] Robertson's study is extensive (R. pl. 3).

[183] See preceding note.


673
671
670
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685
843
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782
702
703
706
705

Fig. 10.—Kotylai, Etc. (Scale 1 : 2.)

Vertical Wavy Lines and Squiggles.[184]

Bright colours, thick fabric. Many examples and some of them large. Some handles have lines.

677. PLATE 42. Part of rim and body. D. 0·14 m. Broad lines, bright red. Vertical wavy lines and detached reserved line. See the next.

678. Pieces of a kotyle. Pattern like the last but more disintegrated.

Meander Hooks (Large).[185]

679. PLATE 42. Half a kotyle. H. 0·17 m. D. 0·24 m., 0·08 m. Clay reddish; nice yellow paint. Large lines all the way down; barred handle, poor hooks. The vase has the top-heavy look of Tall Cups; unmodulated foot. VΘ 3·10 m.

Birds on Parade.

Generally very red paint and clay.

680. FIG. 10. Roundish, thick rim. Birds on two stilts. *Cf.* R. 24 *k* (R. fig. 3).

681. FIG. 10. Quarter of a kotyle. H. 0·087 m. D. 0·042 m. White clay, dark paint. Roundish. Five birds in a panel. Style of birds like R. 24 *l* (R. fig. 3).

682. FIG. 10. R. 24 *m* (R. fig. 3). Bit of rim. Two-legged tiny birds. VR 3·00 m. R. 24 *n* had a similar double-axe at the side, more lines below.

Orientalising Kotylai (mostly Corinthian)

The following are of the later shape, or have definitely orientalising characteristics.

Dark Bases, New Shape.

There are fragments of hundreds of vases like R. 26 and R. 27 (R. pl. 2), all of the Tall Kotyle type, which I suppose to date about 700 B.C. Most of them are of red egg-shell ware, with good wavy lines in the panel. One or two reserved lines above the base are common on this kind of kotyle.

Wire Birds.[186]

683, 4. FIG. 10. Bits of rim.

Serpent on the Rim.

685. FIG. 10. Half a kotyle. H. 0·102 m. D. 0·152 m., 0·05 m. Pale clay, thick fabric. Roundish. Zig-zags in coils of the snake[187] on the shoulder; lines to the base. Worn. VZ 2·40 m.

686. PLATE 42. Another rim with fish. Local.

Large Kotylai.

Probably of the tall shape; pink clay.

687. PLATE 43. Bits of rim. D. *c.* 0·18 m. Pinkish clay. Cranes among geometric patterns, one hatched and eating a snake, the other silhouette, eating a fish (R. 299, R. pl. 17). Probably Corinthian.

688. FIG. 10. Another crane on a shoulder.

689. PLATE 43. Parts of rim, handle and body. D. *c.* 0·26 m. Fired red below. Solid meander hooks on the rim; groups of degenerate,[188] wavy lines on the body; circumscribed pointed rays below. Two other such rims with meander hooks, one set hatched. Corinthian.

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[184] Cf. *Perachora* I 94, pl. 25, 8, there probably dated too early. See also *ibid.* 59, pl. 12, 2.

[185] *Cf.* 650, 727: see above p. 272.

[186] *Cf.* the cup fragment 658 (FIG. 7).

[187] *Cf.* Kahane, pl. XXVIII 1, which is a little earlier both in shape and in handle decoration.

[188] *Cf.* Syracuse, Arias *BCH* LX, pl. XI, A. Both are Corinthian patterns. Payne's reconstruction of a kotyle in Aegina was rash (*NC* pl. 2), and Kraiker's (*Aigina*, pl. D, 189, 197) is definitely misleading. He has put Second Style rays (*cf.* our 690) on a First Style rim. See also 694. Why invent a new style of ray? Why not use those that actually occur (pl. 10, 185; pl. 12, 191)?

690. PLATE 43. R. 301 (R. pl. 16). Kotyle.[189] H. 0·228 m. D. 0·26 m., 0·108 m. White clay, paint worn. On shoulder, stars between four double-axes; fine lines, pointed rays. After 675 B.C. VN 2·35 m. Probably Corinthian.

R. 303 (R. pl. 17) [189] no doubt ended in rays below its four friezes. The dark mark on the rim is half a double-axe; we have found the other half. A star from this vase was found VH 2·10 m.

Part of R. 302 [190] was found in Nucleus 12.

691. PLATE 42. Upper part of a kotyle. D. 0·19 m. Red clay; good brown paint. Dark below; Maltese crosses,[191] with swastikas in the corner, between squiggles; one outline crane by a handle. This kotyle may be eighth century.

Egg-shell Kotylai with Rays [192] (Corinthian).

692. Handle and bit of rim. D. *c.* 0·12 m. Thin fabric; brilliant red paint. Dotted lattice,[193] very fine painting. Dark base with one reserved line.

Figured Scenes.

693. FIG. 18. Bit of rim (may belong to R. 29, R. fig. 5). Dotted lattice on rim.[194] A bearded man, with peaked headgear, is looking down toward his outstretched right hand. His left arm is stretched quite straight, and is grasping the ear of a lion standing at his shoulder. He is wearing a tunic, a baldric perhaps with quiver, and a belt. We do not understand the lines on his left arm. Robertson now puts the style of R. 29 later. Aetos Painter 1*a*. See p. 176.

694. PLATE 42. R. 30 (R. fig. 6). Kotyle. H. 0·092 m. D. 0·104 m., 0·032 m. A fortunate chance brought us the base, and it proves to be a very slim kotyle, at the very apogee of the slim style with long double rays. Robertson's excellent drawing (R. 15) places the style in the first quarter of the seventh century.

695. FIG. 17. R. 31 (R. fig. 7). These fragments had to be re-cleaned, and Miss Petty has made a new drawing. We are sure that the man is not riding the lion, but standing [195] in front of it. His buttock is well down on the lion, we see his genitals, and the fork of his legs is below the lion's belly. We confirm Robertson's Chimaera; we see the serpent's head on the tail, and the spring of the lion's neck. Aetos Painter 2. See p. 176.

From the other side there is a tail waving up like the Chimaera's, but with jaws hissing backwards; so there was another Chimaera. Second Style.

696. PLATE 42 and FIG. 18. Some of the upper part of a kotyle. D. 0·104 m. Similar scheme of decoration and fabric to the last, but the colour changes from red to dark. The border is a chain of diamonds with large dots between the double axes, and the second-storey rays [196] curl over. The reserved space between the three bounding lines is partly incised. Three dogs, bullet-headed, with claws like lions' and two legs each, chase a hare, taller than themselves, to a little man wearing boots and brandishing a branch. Another dog beyond is chasing a horned animal.

The following fragments may belong to a slightly thinner kotyle by the same hand.

697*a*. FIG. 18. Bit of rim and a handle. Head of a lion with a shut mouth. He is either looking back at his tail being pulled, or chasing another animal.

697*b*. FIG. 18. Bare feet of a man wearing greaves beside a feline's foot. He seems to be pulling its tail.

No join.

Linear Style.

698. Bit of rim and handle. D. 0·13 m. Cross-hatched diamond chain on rim, ray below. Style like the rim of 694 (R. 30).[197]

699. Tall kotyle, only small bit of rim. H. 0·125 m. Lower D. 0·056 m. Tall rays,[198] touching; suitable base for 698.

Probably very fine linear painting did not go far into the second quarter, though Weinberg claims to have found some strays.

Figured Style.

700. FIG. 10. Base of a kotyle with long rays not touching. D. 0·052 m. Dark red paint. Two fore-feet of an ungulate animal above three lines; rays below,[199] not touching. Date about 675 B.C. VN 2·50 m.

701. FIG. 18. Another larger hoof, and haunch with still more incised detail. Nucleus 16.

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[189] For loops, *cf.* our oinochoai 951 ff.; see also 1039 (PLATE 58) and Lane, *Greek Pottery*, pl. 13 A. For rays, *cf.* W. 118. It is possible that the kotyle *NC* pl. 2, should be restored with another frieze, and taller than Payne had made it. *Cf.* the meander hooks in 689 and see note.

[190] Surely R. 302 (R. pl. 17) is orientalising and well into the seventh century.

[191] *Cf.* Cumae pl. XLV 3 and our angular oinochoe 1026 (PLATE 56).

[192] Most of these are bright red, some are yellow: later kotylai tend to be darker and coarser.

[193] *Cf.* the pattern on 696 and see Robertson's note (R. p. 17, n. 2) for references to this pattern.

[194] See Robertson on R. 32 (R. p. 17).

[195] *Cf.* the man running behind a lion, Kraiker, *Aigina* pl. 17, 254. For the hare, see on the Hound Painter oinochoe 965 (PLATE 55).

[196] They stop at the line, see photograph PLATE 42.

[197] See Robertson's drawing (R. p. 15, fig. 6).

[198] *Cf.* W. 118.

[199] The rays are not late.

Linear Style.

702. FIG. 10. Tiny kotyle, handle missing. H. 0·058 m. D. 0·07 m., 0·03 m. Good red clay and paint, but rather worn. Rays touching;[200] vertical wavy lines in panel. Good style.
Four or five other such vases were made up, one from VN 2·15 m.

703. FIG. 10. Quarter of a kotyle. H. 0·09 m. D. 0·036 m. White clay, thicker; red above, black below. The rays are drawing apart, and the base is more obtrusive. Not before the second quarter of the seventh century.[201]

704. Kotyle, part missing. H. 0·075 m. D. 0·10 m., 0·042 m. Thick red clay, traces of white slip. Eight long thin rays; poor wavy lines. Not Ithacan nor Corinthian; it may be Attic.[202] Date uncertain. VS 2·00 m.

705. FIG. 10. Part of the middle. Grey paint. Small, not very fine; two dogs chasing. The rays suggest the second quarter of the seventh century or later. *Cf.* FIG. 40.

706. FIG. 10. Half a kotyle. H. 0·075 m. D. 0·10 m., 0·05 m. Broad pink band; reserved rim, narrow rays.[203]

KANTHAROI

The history of this shape has not yet been traced.[204] It is found in Early Geometric in Corinth,[205] in Ithaca (nos. 710–14), and in Athens. It reappears with high handles in Attic Late Geometric. Fortunately Aetos provides us with some sherds from Corinthian Middle Geometric kantharoi with high handles (*e.g.* 717–23), and there are others from Perachora.[206] There may be an influence from some backwoods area, which kept a Minyan tradition, like Marmariani[207] in Thessaly. If that be so, Ithaca may have drawn directly on Thessaly (see no. 707). The kantharos was always popular in Ithaca, and the Late Geometric kantharoi in local fabric seem to owe something to Polis Protogeometric[208] kantharoi, in the shape of lip and of foot and in their patterns. Ithacesian handles are generally monochrome, sometimes heavily decorated or reserved, but seldom barred. Corinthian handles are generally barred.

High-handled Kantharoi

There is no evidence of high-handled kantharoi in Early Geometric, but there are many of these in Ithaca of Corinthian[209] Middle Geometric style. Nearly all have chevrons in the position characteristic of Corinthian Middle Geometric kraters and cups. None is complete. Most of them have bars on the lip. The earliest differ from cups and kraters with triple or horizontal handles in having uprights to the rim beside the handle. The dark base had groups of reserved lines like oinochoai and kraters.

Summary of Characteristics (Corinthian Kantharoi)

Early Geometric

(1) Imported but not certainly Corinthian. Small round vases, monochrome or nearly monochrome; barred or dark small round handles; reserved or monochrome lips. 710–12.

Middle Geometric

(2) Round[210] handles; barred lip, small round vases; barred handle; chevrons. 716.

(3) High handles; barred lip, larger vases; narrow nearly vertical handles with verticals and bars; chevrons. 718, 719.

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[200] Probably earlier than Young's C. 8, see above.

[201] Later than Young's C. 8.

[202] *Cf.* Young 144, C. 25.

[203] For rays *cf.* W. 179.

[204] Kahane, pl. XXII 4 is Middle Geometric by Corinthian rules.

[205] *Cf.* W. 44.

[206] *Perachora* I 61, pl. 13, 8 and 9, pl. 123, 1. See p. 262 above.

[207] See *BSA* XXXI 28, fig. 17; *JHS* LXX 18 ff.

[208] *BSA* XXXIX, pl. 6, 25 and 26. I now consider these vases Protogeometric in style, see *BSA* XLIV 307 ff.

[209] See above, p. 262: see 717–723.

[210] See p. 287 below for new kantharoi at Delphi. T. J. Dunbabin comments that there is none from the temple of Hera Limenia, which rather suggests that they did not survive the Geometric period.

Late Geometric

(4) Similar; handles wider and barred. 722.
(5) Medium handle. No bars on lip, lines all down; *cf.* cups [211] and kotylai. 727.
(6) Very ornate. *c.* 700 B.C. R. 44.[212]
(7) Seventh century. R. 43 (R. pl. 6).

Non-Corinthian Kantharoi

This is an untidy section. The kantharoi in red Ithacan technique, with local patterns, which Robertson has listed as occurring on other shapes, are now fairly orderly. Trouble starts when painting in Corinthian style, with Corinthian motives like crested birds (758 and 759), and thin incised snakes (763), appears in the red technique. It grows worse when neither painting nor technique can be firmly associated with any locality. Worst of all, some of the bits may not be from kantharoi. I give some general aids for dating and leave the rest open.

SUMMARY OF CHARACTERISTICS (NON-CORINTHIAN KANTHAROI)

Bases :	Decoration :	dark at the foot, no rays.[213]
	Shape :	conical like Protogeometric.
Handles :	Decoration :	Early, monochrome.
		Late, very ornate.
	Shape :	(1) Small, round. R. 332 (R. pl. 21).
		(2) Wide-flung, high, at all stages. 732, 763.
		(3) Medium high, about 725–700 B.C. *E.g.* 755.
		(4) Upright high, at all stages. 741, R. 314.

Seventh century [214]

(5) Wide, round. 760.
(6) Pinched in. 768.
(7) Flat, upright. 773.

Slimming.

Sometimes high handles heighten the effect of slimming, *e.g.* 744 and R. 326 (R. pl. 18); sometimes also it is helped by the decoration, *e.g.* the herons on R. 314, 315 (R. pl. 20). Probably these two vases were on high feet, and date about 700 B.C.

Decorative Schemes.

Eighth Century :	(1) Simple Ithacan patterns. 728–40.
	(2) Complicated East Mainland patterns. 741–59.
Seventh Century :	(3) Very elaborate. 760–6, especially 763.
	(4) Dark-faced, simple. 768–73.

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[211] *Cf.* 650 above for similar Tall Cups.

[212] R. 44. This vase is probably later than the earliest Tall Pyxides and certainly later than the earliest kotylai, which Robertson places with them. It is at the height of the fine style. See R. pl. 4.

[213] R. 45 (R. p. 20) is not a kantharos but a flat-bottomed oinochoe, *cf.* W. 141, belonging to the second Bf. style.

[214] Four vases of identical seventh-century style have handles of types 3, 5, 6. They are 747, 748, R. 333 (R. pl. 21) and R. 334.

Kantharoi with Ithacesian patterns (707–9, 728–40).

R. 332 (R. pl. 21), with small round handles and a few reserved lines, is probably the earliest: it may be Middle Geometric. The rest of the local kantharoi in red technique have a good many lines running down the body, which means that they are under Late Geometric influence, and belong to the second half of the eighth century. We must not let primitive patterns and a conical foot cheat us into believing that vases like 732 are as early as they look.

Kantharoi with East Mainland Patterns (741–66).

For R. 327 (R. pl. 20) *cf.* our cups 635 and 636 (FIG. 8), which are probably Tall Cups. The pattern is early and Corinthian, but it is here in the middle of lines.[215] Note the absence of boundary lines and *cf.* the unfinished look of W. 1. 744 looks early, but its untidy wavy lines are not earlier than the second half of the eighth century. It might be Argive. Argos is fond of high-handled kantharoi. 741 might also be Argive with its split handles and untidy wavy lines. The artist could not face drawing the meander on the back, and substituted more wavy lines. 771 is of the variety of Tall Cup with lines above a dark base (*cf.* 653, FIG. 7), but does not seem to be of Corinthian fabric; 749 goes with 744 in fabric, but has lines all down, like 727. A good many other fragments are equally regrettable. R. 357 (R. pl. 23), with round handles and lines all down, is in this company, but is probably seventh century. R. 380 (R. pl. 23) also has a similar base, with lines all down. The handsome kantharos 763 (R. 330) has been restored, though the rim is uncertain (details on R.'s pl. 20). The drawing is Corinthian in style, but nothing like it is reported from Corinth. It has thick and thin lines at the foot, and the height is certain. This base decoration takes with it R. 313, with fighting birds and also 733, which has Protogeometric patterns.

Robertson rightly put the dark-faced class late (R. 352–4), but set them among the mugs.[216] Fabric, shape, and decoration put them with the dark-faced very fine kotylai[217] and cups,[218] and the shape is slender (see our 768). There were also many more robust and lighter-coloured glazed kantharoi, which Cook thinks are Argive and belonging to the sixth century.

Kantharoi of Uncertain Date[219]

707. FIG. 9. Rim and body, with marks of two handles. D. 0·116 m. Bright red clay; black paint. Uprights at the handles, and cross-hatched patches; lines above and below. Decoration, shape and fabric like kantharoi at Marmariani.[220] It may be under Geometric influence.

'Sausage Style.'[221]

708. PLATE 47. R. 320 (R. pl. 19) part of a kantharos, has had some pieces added. D. 0·124 m. Fine surface, good dark glaze. It shows the mark of a vertical strap-handle. It links up with the following, and it is like vases at Polis,[222] some not illustrated.

709. FIG. 9. Half the middle of a wide vase, mark of one vertical handle. Brittle, buff clay, much worn. Zig-zag; 'sausages' above, like the preceding. W3, 1·50 m.

Early Geometric Kantharoi

710. PLATE 45. Bit of rim and handle. D. *c.* 0·10 m. Good fabric and dark colour, like mainland Early Geometric Rim bends out like Protogeometric[223] cups, but has a nick on it. Handle striped. Wall 26.

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[215] Cf. *BCH* LXXIV, pl. XXXIX 3, from Delphi, which is earlier.

[216] I fear at my instigation: see the 'two-handled mugs' at Polis *BSA* XXXIX 19, no. 5, fig. 7. It is a bad reconstruction. Contrast our 714, from which the later kantharoi are descended.

[217] *E.g.* W. 113.

[218] *E.g.* 663 FIG. 7.

[219] I apologise for the 'Uncertain' category which is a confession of weakness.

[220] *BSA* XXXI 17. For the cross-hatched patches *cf.* nos. 733 and R. 357 (R. pl. 23).

[221] See p. 271 above.

[222] *E.g.* Polis, Geometric 2. *BSA* XXXIX 19.

[223] *Cf.* W. pl. 1.

711. PLATE 45. Similar.[224] It probably belongs to 710. Slight nick on rim. Shrine, below 1 m.

712. Kantharos, one handle missing. H. 0·084 m. D. 0·09 m., 0·054 m. Red clay, might be Attic. Round handle; ringed foot. Black paint, white [225] line inside and outside rim, white on barred handle, three white lines below. Clearly Geometric. Wall 27, 2 m.

713. PLATE 45. Half a kantharos. H. 0·084 m. D. *c.* 0·09 m. (irregular), 0·048 m. Pink clay, thick fabric; streaky brown paint. Reserved line outside rim, handles brown. From many parts. Base V8, 2·15 m.

714. PLATE 45. Kantharos. H. 0·085 m. D. 0·010 m., 0·054 m. The upper diameter varies a centimetre, so accuracy of profile is clearly impossible. Same fabric and paint. Like no. 712, but has five reserved lines. VZ, Lower Deposit.

715. PLATE 45. New photograph of R. 331 (R. pl. 21).[226] The technique, shape of the rim, the leaves all round the top, and the thread below the rim, place it closely with no. 818 (PLATE 50), the pyxis on a strange high foot. As I call the pyxis Early Imported Geometric, this large kantharos must go with it.

Middle Geometric Kantharoi

Round Handles.

716. PLATE 45. Kantharos.[227] H. 0·073. D. 0·106 m., 0·056 m. Red clay; thick brownish-black paint. Bend in the rim, which is barred. Chevrons; round handles; [228] low round body: Corinthian shape of foot. Certainly imported. Bars on rim. VZ 3·20 m.

High Handles.

Corinthian.

717. FIG. 9. Handle, part of vase attached.[229] Fabric like 882, but a little paler clay; thick good glaze. Half-way handles, broad stripes, verticals near the handle.

718. FIG. 9. Base. D. 0·066 m. Similar fabric. This is the shape of some Ithacan kantharos bases. Reserved lines above the foot. May belong to 717. VΘ 2·55 m.

Part of another handle found at W 2·00 m.

719. (*a*) Handle, (*b*) part of rim and body. D. 0·198 m. Similar fabric to the last. Broad lines, chevrons; rim has bars. Depth 3·20 m.

720. Part of body near base. Excellent fabric, reserved lines. V4, 2·00 m.

721. Part of rim and part of body. D. 0·162 m. Good dark-brown paint. Uprights stop below the rim, so perhaps not a kantharos. Chevron frieze narrow, but chevrons broad; rim has bars. W4, 1·70 m.

722. FIG. 11. Most of rim and a half-way handle, like 727 but wider; cross at the top of it. D. *c.* 0·155 m. White clay. Off-set. Frieze of uprights and chevrons. VG 2·15 m.

723. Part of rim.[230] D. 0·16 m. Paint dark, thick and streaky. Slight off-set. Rim has bars.

724. Two kantharos handles.[231] Thick greenish clay; paint much worn. No rim, so no section can be made. Handles high and narrow. Vertical and horizontal lines on handle; verticals by the handle and then broad lines beside them: perhaps a wavy-line pattern. The clay is rougher than that of the other Corinthian kantharoi in Ithaca. Wall 27, 2·00 m.

Late Geometric Kantharoi

Corinthian.

The next two differ from the Middle Geometric kantharoi chiefly in colour.

725. Rim, mark of handle. D. 0·14 m. Red clay fired red; perhaps added white, red paint gone. Wider frieze, strokes on rim. Parts of high handles of similar technique also found. Chevrons of an early type. VΦ 2·25 m.

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[224] Earlier in style, though possibly not in time, than W. 44. More like Attic kantharoi, and the fabric may be Attic. Corinthian Early Geometric is strongly under Attic influence and perhaps derived from it. I am now doubtful of the reconstruction of *BSA* XXXIX 18, fig. 7, 5 (Polis).

[225] On this and the following vases, 'white' could be 'reserved'. I am doubtful.

[226] No exact parallel, but *cf.* the shape of Protogeometric kantharoi, *Kerameikos* IV, pl. 21. A large Middle Geometric kantharos from Delphi (Weinberg, *AJA* 1941, 33, fig. 3), has similar, drooping handles, and the general shape, though probably later, is not unlike. See also *BCH* LXXIV, pl. XXXIX 1.

Robertson (*op. cit.* 105) derives the leaves on the rim from the local Protogeometric, and claims the vase as Ithacan. But many other fabrics had such bars, notably Corinthian kantharoi in Ithaca, whereas they are absent from all Ithacan kantharoi in Ithaca except R. 319 (R. pl. 21), which is later. *Cf.* W. 45, W. 47.

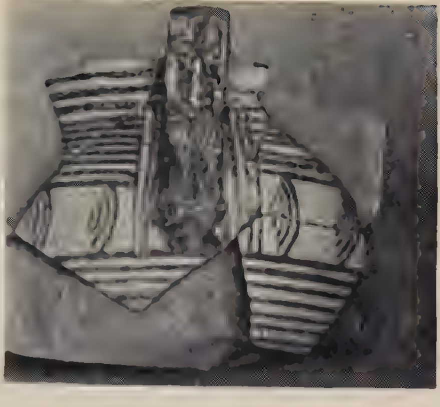
[227] *Cf.* W. 75 for the painting.

[228] *Cf.* the handle of R. 47 (R. pl. 4), which is Early or Middle Geometric and exactly like a mug at Delphi, *BCH* LXXIV, pl. XXXIX 1. 716 is earlier than the kantharos *loc. cit* 3.

[229] Very close to a kantharos with round handles at Delphi, *BCH* LXXIV, pl. XXXIX 1.

[230] The shape of the body is like 717.

[231] They are like *Perachora* I 61, pl. 13, 9; see pl. 123, 2. The author compared a kantharos in Dresden, which is in an early Tall Cup style—small panels in a wilderness of lines. See p. 266 above. Both in Ithaca and Perachora there are verticals by the handles: but see 727.



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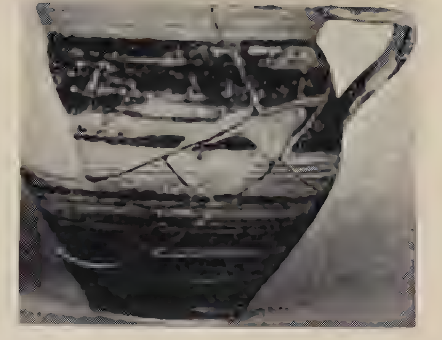

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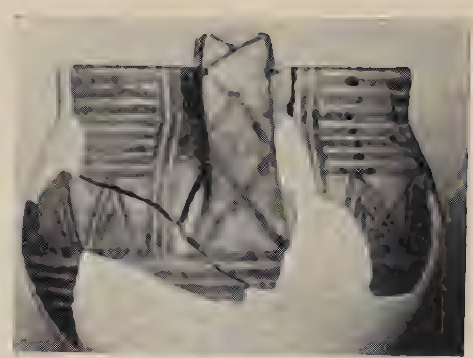

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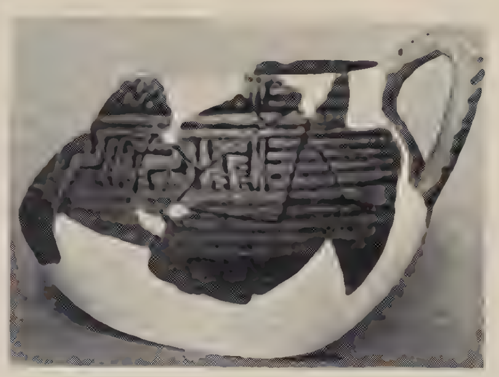

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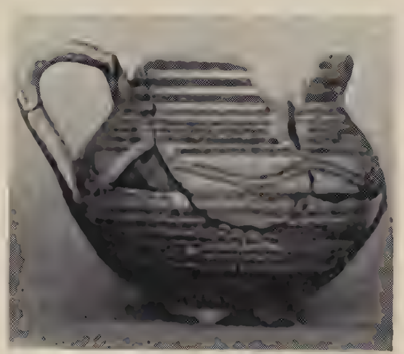

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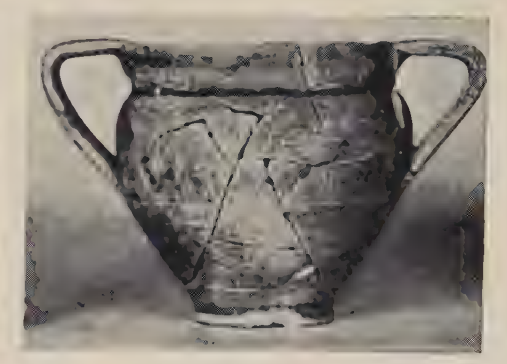

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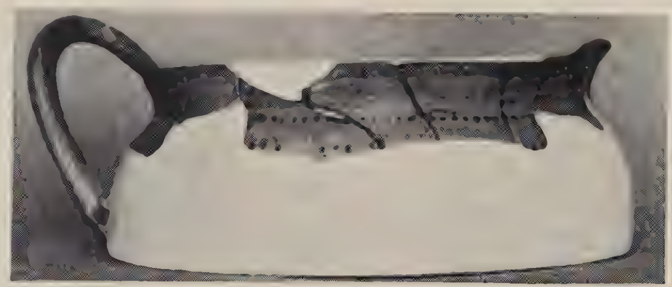

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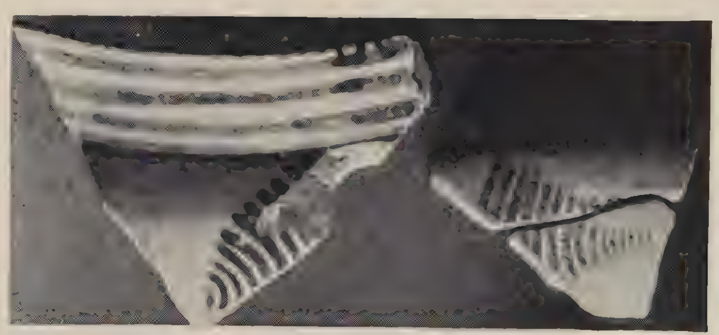

737

738

Fig. 11.—Kantharoi. (Scale: 768 (1 : 4); 731 (1 : 3); 736 (1 : 3); 737, 738 (2 : 3); rest 1 : 2.)

726. Piece of off-set rim and upright handle. D. 0·14 m. Buff clay, brown paint. Thinner lines and chevrons. Strokes on rim. Wall 27, 1·85 m.

727. PLATE 45. Kantharos.[232] H. 0·125 m. D. 0·134 m., 0·066 m. Clay, reddish buff; nice brown paint. Note the unmodelled base. Technique, meander hooks, and shape like many of the Tall Cups. The rim is off-set. No uprights at the handle; on it, a star between stripes. VN Pithos 2. Last quarter of the eighth century at earliest.

Non-Corinthian Geometric Kantharoi with High Handles

Red Ithacan Technique.

'Sausages' and 'Swathes.' [233]

728. FIG. 9. Base, section to rim. H. 0·135 m. D. *c.* 0·135 m., 0·07 m. Thick red clay, black paint. 'Sausages' meeting under the handle. Broad reserved lines. Two broad wavy lines on rim. Handle may belong; only slightly raised; top reserved with crossed line; it looks primitive.

729. Piece of rim and handle. D. 0·11 m. Medium handle, ribbed in the middle. 'Sausage' in front, three 'swathes', dark band above base. Shrine.

Five other vases like it.

'Swathes' in the middle.

730. FIG. 11. Kantharos, one handle missing. H. 0·87 m. D. 0·08 m., 0·54 m. Thick fabric. Handle only slightly raised. 'Swathes' [234] between lines. Pithos 1. This is a more civilised vase and probably not very early.

Triangles.

731. FIG. 11. Top part of a kantharos. D. 0·128 m. Red Ithacan fabric, perhaps a white slip. Handles shaped like 727; diamond chains on them. Rim an indeterminate curve. Frieze of inscribed triangles; uprights reach the rim.

Two pieces of finer rims, with much bigger triangles below. One from VH 2·10 m.

732. PLATE 46. Kantharos. H. 0·17 m. D. 0·13 m., 0·07 m. Red clay; smooth red surface; dull black paint. Glazed half-way handles; characteristic kantharos foot, derived from a Protogeometric shape. Hatched triangles; uprights to the rim. VZ 3·20 m.

Top of another similar, but finer, vase with handles like the last. VZ 3·10 m.

733. PLATE 45, FIG. 12. Rim and parts of body. D. 0·18 m. Same fabric, fine condition. Decoration shows Protogeometric motives in considerable confusion, but the lower part shows that it is Geometric. Mastoi. May not be a kantharos, but recorded here because of the shape of the rim. It is elaborate, and has thick and thin lines below.[235] *Cf.* R. 313 (R. pl. 20), and our 763.

734. PLATE 47. Some pieces of rim and body. D. *c.* 0·14 m. This is not in the usual Ithacan technique. Thick clay, perhaps a white slip. Cross-hatched triangles between squiggles.[236] One set of uprights goes through one lip line. Coarse painting. Shrine, 1–1·15 m.

Inscribed [237] Semi-circles or Quarter-circles.

735. R. 305 (R. pl. 18) has received a second handle. They are large spreading handles like those of 732.

736. FIG. 11. Handle and part of rim. D. 0·14 m. Rounder handle, pattern neatly done, like R. 305.

737–739. FIG. 11. Scraps from kantharoi or kraters. Good technique like R. 307 (R. pl. 19), which is probably from a krater,[238] and in Geometric style. No design is complete, but I have figured two, because they seem to be a clear inheritance from Protogeometric [239] patterns. One with Protogeometric technique, but still incomplete, was found in VN 2·90 m.

Pot Hooks.[240]

740. Part of rim, handle, and body. High spreading handle, dark base.

Six other vases.

A sherd from V4, 2·55 m., joins R. 308 (R. pl. 18).

Non-Corinthian Kantharoi with East Mainland Patterns

Eighth-century Style.

Most of these vases have brown paint, rather like Attic. None of them is Attic. Most are not in the red Ithacan technique.

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[232] *Cf.* a kantharos in Dresden, *AA* 1892, 162, no. 24. *Cf.* also 650 and 679 and p. 266.

[233] *Cf.* R. 319 (R. pl. 21), which is neater and has a detached reserved line.

[234] For pattern *cf.* R. 309 (R. pl. 18).

[235] Not shown.

[236] For the pattern *cf.* Thera, *AM* 1903, Beil. XXIV 1, HI 11: an Attic Late Geometric oinochoe. Another in the Ashmolean, 1934, 301, and the tall necks 982–3, PLATE 58, below.

[237] By 'inscribed' I mean with one or more lines drawn inside the outline.

[238] *Cf.* our krater 802, *JHS* LXX 99.

[239] *Cf.* *BSA* XXXIII, pl. 4, 43.

[240] *Cf.* 914 (FIG. 15).

Inscribed Meanders.

741. PLATE 46. New photographs of R. 325 (R. pl. 19), with some pieces added. Brown paint. Inscribed meanders are an early Attic Geometric pattern, but they are generally solid, not hatched like these. The two sides of the vase are different. The painter is careless, especially in his loose friezes on the back. Split, very upright handles. This handle is common in the Argolid and the vase may be Argive.

742. Bit of rim. D. 0·14 m. Top of an inscribed meander, dots all round rim.

743. Another. Fine technique.

Vertical Wavy Lines.

744. PLATE 46. Kantharos,[241] part of a handle missing. H. 0·215 m. D. 0·16 m, 0·09 m. Clay, buff; good brown paint. Upright handles with bars. The wavy lines straggle on the lip, which is sharply off-set. Second half of the eighth century. May be Corinthian.

745. PLATE 46. Section perhaps of a kantharos, no handles. H. 0·14 m. D. 0·15 m., 0·74 m. Clay, pale; paint: inside, maroon, outside, scarlet to black; painting neat. The vase may be Corinthian.[242] The detached reserved line suggests the last quarter of the eighth century.

746. PLATE 47 (R. 323). Kantharos. Red clay and paint, technique not unlike R. 161 (R. pl. 9). The shape is a relative of the kyathos, the decoration is an absurd combination of ‘ sausage ’ and wavy lines; vertical and horizontal lines on handles.

747. PLATE 46. Kantharos, section only. H. 0·157 m. D. 0·12 m., 0·06 m. Red Ithacan clay and smooth surface; black paint. Two friezes of poor wavy lines. Handles like 727. From the Shrine.

748. Half of a similar kantharos,[243] base missing. The wavy lines are almost chevrons; no verticals; quite flat handle.

Meanders.

749. PLATE 45. Two handles and a base, which do not quite join.[244] D. 0·13 m., 0·06 m. Red clay, white slip, yellow and brown paint. Elaborate, untidy patterns on rim and shoulders; lines below. Long meanders between dotted or cross-hatched diamonds. Hairy lines on the handles. Handles more upright than 727, very elaborate. W1.

750. PLATE 47. Piece of rim. Same technique, same panels; style less elaborate, but as untidy. Cross-hatched triangles on the rim, arranged in a favourite Attic manner.[245]

751. PLATE 47. Similar. Wavy lines on the rim, similar meander. Upper Deposit.

752. Similar. Diamonds on the rim, probably a meander below. Mark of an upright handle.

Diamonds.

753. PLATE 47. Piece of bulging shoulder. Brown paint. Interlocking triangles [246] and diamonds, cross-hatched and solid.

754. PLATE 47. Bit of rim. Red Ithacan technique. Three friezes.

755. FIG. 11. Half the top of a kantharos, base missing. D. 0·136 m. Red clay, dark-brown and yellow paint, perhaps a white slip. Seems to be imitating the style of 727. Lattice [247] on the rim; dark below; barred handles. The meander-hooks are short.

756. PLATE 47. Bit of rim. Red clay, good brown paint. Vertical chains of diamonds [248] in a panel; above, lines. Squiggle at the end of the panel. May be Corinthian.

757. PLATE 47. Another. D. 0·19 m. Similar technique. Double chain of diamonds,[249] dark below. Looks Corinthian.

Birds.

758. FIG. 9. Bit of rim. Corinthian finish. Hatched crested birds in a panel, ‘ worms ’ between.

759. Scrap of rim. D. 0·18 m. Red clay, brown paint. Crested bird [250] in a metope on the shoulder. Corinthian style of painting.

Running Spiral on the Rim.

759*a*. FIG. 9. Bit of rim. Pink clay, white slip, red paint. From a large vase with a high rim.

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[241] *Cf.* the shape of R. 326 (R. pl. 18), which is Ithacan and looks later; it has a dotted St. Andrew’s cross on the handles.

[242] *Cf.* the krater 798 (PLATE 49) and the Syracusan krater (see p. 295).

[243] See p. 287 above and *cf.* R. 333 (R. pl. 21).

[244] It is against my principles to guess at shapes, but I have had to stretch a point here and in a few other vases, in order to illustrate them. The shape is nearly certain.

[245] *Cf.* Kahane, pl. XXVI 3. 749–53 are so similar in technique and style that they are probably all the same shape.

[246] *Cf.* 750 and the Protogeometric drinking vase P. 134 (FIG. 6).

[247] The style of the painting of both patterns is like that of the oinochoe 891 (FIG. 24).

[248] See 642, 892, 894 ff.

[249] *Cf.* pattern on handles of 763, better seen on R. 330 (R. pl. 20). That kantharos has the same rim pattern as 756.

[250] *Cf.* bird on tall-necked oinochoe 1020 (PLATE 58).

Probably Seventh Century (Elaborate Style).

Many of these have running spirals on the rim.

760. PLATE 47. Top half of a kantharos. D. 0·125 m. Red clay; slip; paint red to black. Off-set reserved rim; wide round handle.[251] Derelict meander-hooks between ‘ sausages ’, base dark. Perhaps seventh century. VZ 3·25 m.

761. PLATE 47. R. 322 (R. pl. 21). Kantharos. Note decoration of handle. Red Ithacan technique.

762. PLATE 47. R. 321. Kantharos, base missing. Similar technique. Twist on the handle, dots on rim. Handles spreading like R. 322.

763. PLATE 45. R. 330 (R. pl. 20). Kantharos. H. (estimated) 0·27 m. D. of base 0·10 m. Sherds do not join, but overlap. Note contrast [252] between thick and thin lines below. The pattern on the rim is like the handle-pattern.[253] The painting is perfectly Corinthian, but the technique looks Red Ithacan. VZ 3·41 m.

764. PLATE 47. Part of rim. D. 0·10 m. Same clay. Wide solid rays on the shoulder, dots all round rim; the only rays on a kantharos.[254]

Note that the rim of R. 329 (R. pl. 20), is not dark above or below; the darkness is merely a shadow; on the rim, groups of three wavy lines, as on the shoulder; below, other groups of wavy lines.

765. PLATE 47. Piece of rim. D. 0·16 m. Double-axes.[255]

766. Piece of rim. Red clay, dark paint. Inscribed zig-zags [256] with points, groups of bars on rim. Probably Corinthian. Wall 28.

Dark Late Kantharoi

Some of these vases may be earlier, but I have put them here because of their likeness to tall dark kotylai, in fabric and in elongation.

767. Kantharos. H. 0·085 m. D. 0·095 m., 0·053 m. Fabric, thick; poor brown glaze. Handles vary.[257] Date uncertain. VN 2·70 m.

768. FIG. 11. Kantharos. H. 0·102 m. D. 0·096 m., 0·048 m. Clay, red; black and yellow paint, good finish. Fine lines inside and outside the off-set rim, and on the middle of the body. The fabric [258] is like the cup 663 (FIG. 7). Note the pinched-in handle.[259] VN 2·30 m.

There are a great many vases like this, others at VN 2·40 m. R. 354 (R. pl. 22) is another, its handle was found at VN 2·40 m. and is reserved, like many of these handles.

There are some attractive sherds with ebony-black glaze.

769. Part of base. Same fabric. Nicely modelled; reserved lines; low.

Ornamental Handles, Added White.[260]

770. PLATE 47. Round handle. White clay, black paint, added white. VS 2·50 m.

771. PLATE 47. Angular handle, off-set rim. Red clay, same paint; white lines on the body.

772. PLATE 47. Another similar. White lines inside.

Glazed.

773. FIG. 11. Kantharos.[261] H. 0·09 m. D. 0·084 m., 0·044 m. Red clay; yellowy-brown paint; rough. Off-set lip. Paint scratched off in a line below handle. Similar fabric to R. 287 (R. pl. 16). May be sixth century. VN 2·40 m.

MUGS

The ultimate ancestor is no doubt the Mycenaean tea-cup, and sherds of these were found at Tris Langadas. The connection with the local Protogeometric [262] is for once clear and undeniable, in both shape and pattern: low, one-handled vases, with segments of circles [262] and zig-zags. Two fragments of this type, 774, 775, were found in my excavation, but they were stratified in the upper deposit.

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[251] For the round handles *cf.* R. 357 (R. pl. 23).

[252] For contrast of thick and thin lines, *cf.* pear-shaped aryballos R. 236 (R. pl. 12) and R. 313 (R. pl. 20) with fighting birds. For the incised serpent and thick and thin lines, *cf.* R. 171 (R. pl. 10).

[253] See R. 330 (R. pl. 20). See p. 287.

[254] For R. 45 see p. 325 below. *Cf.* W. 116. 764 may be Corinthian.

[255] *Cf.* Kraiker *Aigina*, pl. 11, 180, said to be a kantharos.

[256] Cf. *ibid.* pl. 8, 133. Both vases are more likely to be kantharoi than cups, and certainly they have little in common with the plain cup *VS* pl. 9, 4 to which Kraiker compares 133.

[257] Handles like *VS* pl. 2, 4 which has lines all the way down.

[258] See W. 157, *VS* pl. 9, 4.

[259] *Cf.* the kyathos R. 52 (R. pl. 4), which has short fat rays and very fine painting.

[260] This time it is certainly ‘ white ’.

[261] J. M. Cook pointed out to me the likeness to certain Argive kantharoi from Mycenae, which he is publishing. See p. 42. The Argive vases have higher lips. The line below the handle is not now in added white, as on the Argive vases: it looks like scratching. Many were found with the Late Corinthian kotylai. See p. 258.

[262] *BSA* XXXIII 45. The author has restored no. 55 with a violently pinched-in handle. Contrast the round handle at Polis, *BSA* XXXIX 21 fig. 10, 4.

The shape will not, however, be of local origin as Desborough suggests (*Protogeometric Pottery* 275); see W. 12 on W. pl. 1.

R. 47 (R. pl. 4), in Middle Geometric style, is the earliest Corinthian mug at Aetos;[262] it has a nicked rim and a handle that is round in shape but not in section. A deeper mug with a straighter handle, 777, is probably the next step, and lastly there is Late Geometric decoration, lines reaching to the foot, off-set lip, and pinched-in handle, R. 349 (R. pl. 22). Handles are generally monochrome; 776 is reserved, the import R. 47 is barred and R. 349 partly barred. For R. 352 see p. 287 and for R. 356, see p. 327.

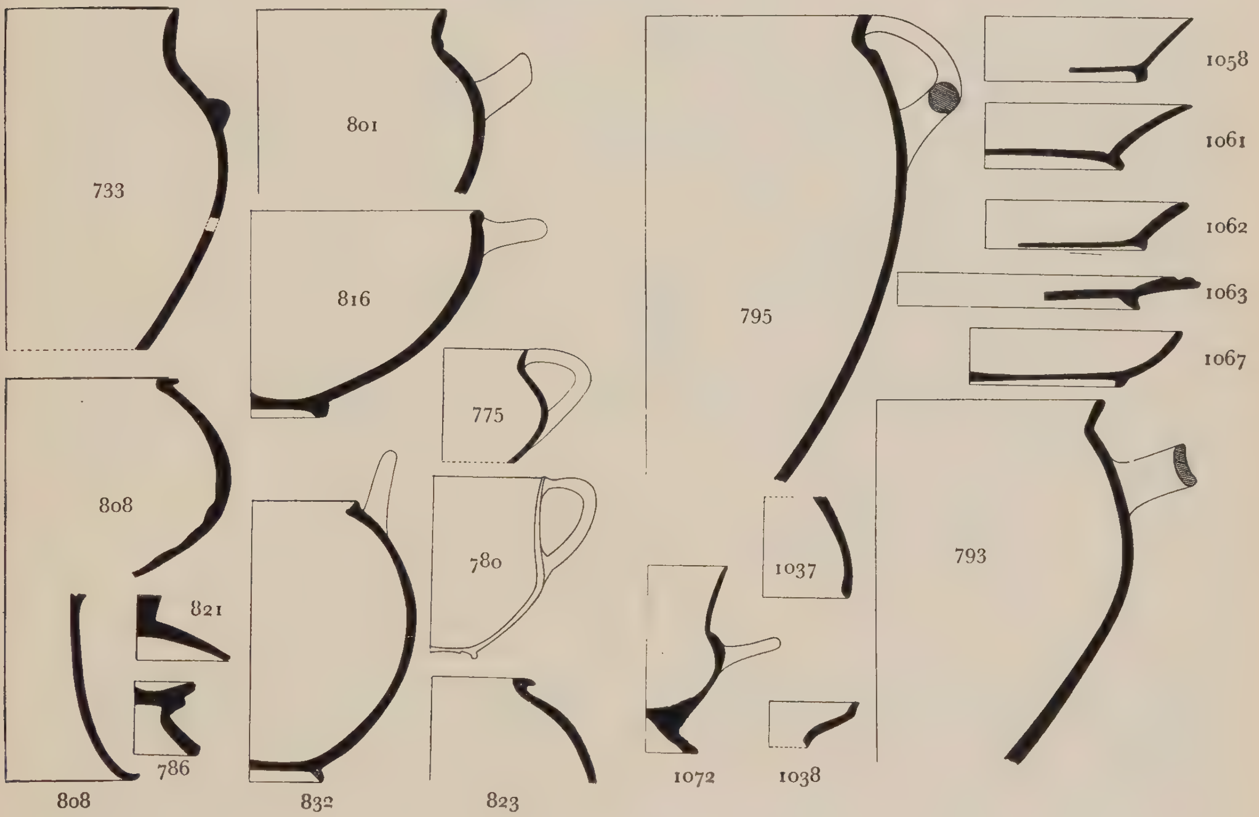

FIG. 12.—SECTIONS OF VASES. (SCALE 1 : 4.)

There were dozens of unstable mugs at Aetos, most of them dark glaze:[263] perhaps they were used as dippers and instability did not matter. The Late Geometric mug is a peculiarly Ithacan shape, the corresponding Corinthian shape is the 'Small Jug'.[264]

774. Top part of a mug.[264] D. 0·088 m. Red clay, black paint, very thin; reserved line on lip. Wall 27, 1·65 m. Upper Deposit.

775. FIG. 12. Round handle,[265] part of body. D. 0·08 m. Not certainly a mug. Looks primitive. W3, 1·68 m.

776. Mug.[266] H. 0·088 m. D. 0·09 m., 0·046 m. Brownish clay, some black paint. Handle and lip reserved. W4, 0·95 m.

777. PLATE 44. Another, almost identical, but with Corinthian clay.

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[263] See p. 266; some may be late. [264] See p. 327 below. [265] Cf. *Perachora* I, pl. 11, 2.

[266] Deeper than *Perachora* I, pl. 11, 1, but looks like it. Beer-mug shape.

Zig-zag.

778. PLATE 44. Mug. (R. 245). H. 0·085 m. D. 0·08 m., 0·044 m. Red clay, black glaze. Untidy zig-zag on the shoulder; otherwise it is like that on H. 55. 778 is deeper and has an off-set. Two other similar vases and many fragments were found. Date uncertain.

There was a monochrome mug from Pithos 1, and many others have been completed. One mug with concentric semicircles, like R. 347 (R. pl. 22), was found in Pithos 1; fragments of at least twenty others with this decoration were found.

KYATHOI

There are no kyathoi [267] in Middle Geometric technique, nor even with the chevrons of the earliest kotylai, so it must be supposed that they came in after the kotylai. Their later history should be parallel; the slimmer will be later, and as with kantharoi, which also influenced [268] kyathoi, an angular handle suggests the seventh century. Most have well modulated feet, which are found on kantharoi but not on mugs. The bodies are like those of Aetos and Polis Protogeometric kantharoi on high feet, but that is probably an accident. All examples seem to be Corinthian or Corinthianising. If 746 (PLATE 47) is Corinthian, and it may be, one would say it is a kantharos turning into a kyathos.

779. PLATE 44. Kyathos. H. 0·095 m. D. 0·086 m., 0·044 m. Coarse thick buff clay; brown paint. Horizontal lines with 'sausages' at the barred handles.[269] Probably not as early as it looks.

779*a*. FIG. 9. Sherd. Grey paint. Decoration like cup 628; lines inside. Nucleus 16, 3·60 m.

780. FIG. 12. Half a kyathos. H. 0·095 m. D. 0·116 m., 0·048 m. Fine buff clay; good black glaze; undecorated Corinthian foot. Looks Corinthian, but there is no parallel.[270] Second handle uncertain.

781. PLATE 44. Top half of a kyathos. D. 0·11 m. Red clay, black paint. Two friezes with groups of diamonds, fine lines; dark below; lines inside, and groups of lines on the handle. Probably Corinthian.

782. FIG. 10. Kyathos, handles missing. H. 0·98 m. D. 0·094 m., 0·044 m. Pink clay, paint gone. Probably undecorated. Probably of the same period as Tall Kotylai, near 700 B.C. VH 2·10 m. A bronze horse was found inside it.[271]

783. FIG. 9. Two bits of rim and of body. Buff clay. Hatched outline birds,[272] looking back; groups of neat wavy lines; reserved lines inside. Corinthian.

784. Scrap of rim. Chequer board [273] and other patterns in uprights. Lower Deposit.

785. Part of body. Close decoration,[274] three friezes like those on 779*a*. Off-set [275] on the body.

There is an endless number of Corinthian kyathoi like R. 49 (R. pl. 4), and many with dark glaze.

KRATERS

It is difficult to use names of shapes consistently. I count large vessels on high feet as kraters, if they are painted inside, whatever their handles. It is easier to take those pots of the shape of drinking utensils, however big they are, in their historical place among the drinking pottery.

A good many Late Geometric kraters might just as well be classified as pyxides, particularly 796, for the rim looks as if it were not meant to be seen, and there is a suitable lid for it. Still it is painted inside, so it passes as a krater.

Corinthian Middle and Late Geometric Kraters

Kraters 787–91 can be added to R. 55 (R. fig. 13, it cannot now be traced) as Corinthian Middle Geometric kraters.[276] The technique of 789, with tangential circles round the middle, certainly belongs to the first half of the eighth century, and R. 59 (R. pl. 4) to the second half.[277] Perhaps the Late Geometric kraters are more instructive. The three- and four-rhythm groups of lines give place to a solid block of reserved lines which creeps down the vase. Two-piece handles give way to loop handles, which are at first barred, then partially barred, and lastly painted with horizontal lines. R. 378 [278] (R. pl. 24) belongs to this series, probably in the third quarter of the eighth century. Its technique is perfectly Corinthian, and its shape of rim and decoration of handle are close to W. 103. It has one band of good Corinthian-looking chevrons. Among these kraters only 797 looks as if it might be seventh century. Its groups of vertical wavy lines and its fine red colour recall the flat-bottomed oinochoe R. 161 (R. pl. 9), but the groups are in sevens not in fours.

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[267] See *VS* pl. 10, 2–5.

[268] Kyathoi took their tall lines, which Payne mentions (*Perachora* I 60), from the decoration of kantharoi.

[269] Cf. *BSA* XXXIX 19, pl. 10, 10.

[270] Its quality is like that of R. 70 and R. 166.

[271] E. 194, PLATE 65.

[272] For the style of painting *cf.* 813 (FIG. 20). For birds looking back, *cf.* *VS* pl. XXII 2 d.

[273] *Cf.* R. 44 (R. pl. 4); also Perachora I, pl. 13, 7.

[274] *Cf.* the tall oinochoe neck R. 484 (R. pl. 33).

[275] Cf. *VS* pl. X 3.

[276] For connections with new kraters at Delphi, see nn. 40, 226.

Ithacan Red Technique

The order of the Ithacan kraters is clear: R. 368 (R. pl. 25), 802, 803. The painting grows finer, the vase grows taller. All the patterns are in the Ithacan Protogeometric repertory, but Geometric influence is no less clear. All are in the Late Geometric period.[279] Mr. J. M. Cook has pointed out to me that the bowl of 803 is practically a kotyle. Ithacesians would put anything on a high foot. The handles follow the Corinthian model, two-piece handles giving way to loop-handles.

The shape of the rim and handle of R. 376 (R. pl. 25), which is undoubtedly orientalising,[280] is quite like our krater 800, and this may be taken as a confirmation of the seventh-century dating suggested above.[281] If all the monster kotylai, cups, and kantharoi, in all fabrics, are added to the dinoi, Aetos is well provided with mixing-bowls in the seventh century.

There is a variety of queer high feet which I have drawn and photographed. Those interested may consult my note-books. Some are not unlike the bases of Arias' vases on his pl. XIV.[282] Most are reserved, with bands above and below.

Seventh-century Kraters

Syracusan Kraters.

The friezes of 798 are unexpectedly close to those on an orientalising krater at Syracuse.[282] The base of 798 was probably not orientalising, but it seems certain that the Syracuse krater was produced under Corinthian and not under Argive influence, as Orsi believed. No Argive vase was ever so tidy, and solid rays are almost unknown in Argos. Another link between Corinth and the Syracuse vases is that when Syracuse eventually discarded her two-piece handles,[283] the loops are left cocked up, as they sometimes are at Corinth [284] and at Ithaca.[285]

Group of Kraters and Cups.

These cocked-up handles bring up the question of Robertson's grouping of R. 363 (R. pl. 24) with the cups R. 280–284 (R. pl. 16), which have a sub-Mycenaean appearance. The difficulty is the decoration, a line in a reserved frieze, and the turned-up toes [286] of R. 363, R. 375 (R. pl. 25). It is possible that all belong to the seventh century or later. Our krater 800, with a reserved frieze, goes closely with the krater W. 180: both are Corinthian; R. 362

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[277] A new join shows that it was dark below, and thus upside down on R. pl. 4. It had groups of poor wavy lines above the tangential circles. Kraiker, *Aigina* pl. 8, 121 should be of about the same date. R. 59 is a lovely orange colour, like 865a (PLATE 53).

[278] It has a red potter's mark and a Corinthian-shaped foot. *Cf.* the shape of 796.

[279] *Cf.* the kraters of Marmariani *BSA* XXXI, pl. IX. There the Geometric influence shows chiefly in the shape, but I think it really exists (see *JHS* LXX 19).

[280] Robertson noticed this resemblance, but he dates the orientalising style so high that it did not disturb his sequence. In mine the first had to go last.

[281] See p. 274.

[282] Arias *BCH* LX, pl. XI, A. The *CVA* photographs of these vases (*CVA Syracuse*, pls. 1–3) are misty.

[283] Arias *op. cit.*, pl. XIII. Note the likeness of the pl. XIII 1 to the rim of W. 116, and to many kantharos rims in Ithaca.

[284] *E.g.* W. 119.

[285] *E.g.* R. 376 (R. pl. 25), R. 362, R. 363 (R. pl. 24).

[286] *E.g.* the toe of the dinos 808.

will not be far away. Our cup 661 (FIG. 8) might quite well be Corinthian from its technique, and so might R. 280. W. 119 at Corinth has a rim and handles like them. Reserved friezes are popular on cups in Corinth in the seventh century,[287] and a line in a reserved space flourished in East Greece in the early sixth [288] century. 800 and 801 are a link between Geometric kraters and column kraters.

The dinos series is valuable,[289] and it gives a check for the arrival of the swivel-handle. 804 (R. 382) is orientalising and has the old barred upright handle. 806 is probably not later than 675 B.C., and it has an advanced monochrome swivel-handle. Probably R. 383 (R. pl. 24) is really from Corinth, its colour being intended to represent copper. For the fillet on the high base,[290] *cf.* those on the necks of olpai and of other Late Protocorinthian vases. 808 is certainly of Corinthian fabric and perhaps of Late Protocorinthian date.

The two sherds of R. 381 (R. pl. 23) are of indistinguishable technique, but they are probably from different vases. They are both from the decorative panel, and the first is convex, the second concave. The solid pattern on the latter is not a ray but a double-axe with inscribed semicircle attached, and it must be one of those stray Protogeometric sherds which are so pervasive.

Early Corinthian Geometric Kraters

786. FIG. 12. Base.[291] D. 0·066 m. Reddish clay; nice dark paint. Probably earlier than W. 36, its profile is nearer to Protogeometric.

Middle Corinthian Geometric Kraters

787. PLATE 48. Parts of a krater,[292] base missing. D. *c.* 0·25 m. Light Corinthian clay; good dark paint. Two-piece barred handles. Groups of strokes on the rim; vertical chevrons between uprights at the side; wavy lines above a meander in front; groups of four reserved lines. The pieces of rim do not join but have been placed by their patterns. VZ 3·00 m.

788. Lower part of a krater.[293] D. 0·12 m. Buff clay; good dark glaze. Two-piece handle. From the Shrine, 2·60 m.

789. PLATE 48. Large piece of body. Reddish clay; fine brown glaze. Close tangential circles;[294] four rhythm below. VΘ 3·10 m.

790. PLATE 48. High base (R. 372). D. 0·13 m. Clay and glaze seem to be Corinthian.[295]

791. R. 371. Another similar. D. 0·11 m.

Late Corinthian Geometric Kraters

792. Edge of high base. D. 0·20 m. Pink clay and paint. Frieze of wavy lines. Like W. 73, but the technique looks later. V8, 2·45 m.

793. PLATE 48 and FIG. 12. Half the top of a krater.[296] D. 0·24 m. Clay Corinthian; paint worn. Like W. 74; two friezes of chevrons with a broad horizontal handle, and verticals beside it. It has more lines below the handle and broader groups of stripes on the body. VR 3·00 m.

794. Pieces of a large krater. D. 0·30 m., 0·12 m. Light clay; brilliant red inside. Two-piece handle, off-set rim like 795. Tangential circles on the rim; double-axes on the body between uprights; groups of lines like the preceding.

795. FIG. 12. Piece of rim and body, one two-piece handle. D. 0·24 m. Greenish Corinthian clay. Dark base; lines well down body.

796. PLATE 48. Half a krater. H. 0·21 m. D. 0·21 m., 0·10 m. Red clay and paint, Corinthian.[297] Rim dark; then plain [298] reserved lines; horizontal lines on handle.

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[287] See our 663, W. 278, and several unpublished examples in Corinth Museum.

[288] *Vroulia* pl. 18, 9; pl. 38, 6, found with Late Corinthian pottery. C. W. Clairmont kindly called my attention to this decoration on cups at Antioch and Beirut, which he dates to the beginning of the sixth century.

[289] See p. 264 above on a seventh-century trade route past Ithaca.

[290] T. J. Dunbabin gives me a reference to an unpublished stand, *Perachora* II, pl. 69, 2239.

[291] *Cf.* W. 36; *cf.* also *Kerameikos* IV, pl. 54, inv. 1266 (Protogeometric).

[292] *Cf.* W. 73, 74. The patterns are very close to ours. *Cf.* also the oinochoai 881, 882 (PLATE 15). With this and the other Corinthian Middle Geometric kraters, *cf.* those from Delphi (*BCH* LXXIV, pl. XXXIX 1).

[293] *Cf.* base of W. 74.

[294] *Cf.* Kraiker, *Aigina*, pl. 8, 121 with a handle like 787.

[295] I would place it between W. 36 and 73. Note similar lines on the base of W. 36. See Robertson's section of R. 371.

[296] *Cf.* R. 55 (R. fig. 13), which is lost.

[297] Paint, clay, shape and decoration are similar to G. 1069 in Corinth Museum. The shape is like R. 378 (R. pl. 24: similar dimensions, H. 0·21 m. D. 0·23, 0·082 m.). The decoration and the clay are like R. 437 (R. pl. 29).

[298] Cf. *BCH* LX, pl. XI, a. 798 is, of course, earlier. *Cf.* the foot of the Syracuse vase and R. 392 (R. pl. 26). *Cf.* 745 (PLATE 46).

797. Piece of rim. D. 0·22 m. Pink clay. Groups of large wavy lines on rim and body.

798. PLATE 49. Piece of rim, body, and two-piece handle. D. 0·20 m. Green clay; brown paint inside. Groups of lines on the rim, many friezes.[298]

799. FIG. 32. Half a krater. H. 0·24 m. D. 0·24 m., 0·094 m. Looks Corinthian, bad condition. Two friezes, horizontal zig-zags [299] in groups between uprights and wavy lines. The tall narrow form suggests the end of the eighth century. VN 2·90 m.

Kraters (perhaps Seventh Century, Probably Corinthian)

800. PLATE 49. (R. 364). Upper part of a krater.[300] D. 0·206 m. Red clay, brown paint. Rather high-set strap-handles; blobs round them; reserved panel.

801. FIG. 12. Rim and strap-handle.[301] D. 0·20 m. Paint plain brown outside; inside, bright red.[302]

Ithacan Late Geometric Kraters

802. Krater.[303] H. 0·21 m. D. 0·26 m., 0·13 m. Red Ithacan technique; red clay, yellow paint. Inscribed quarter-circles on the shoulder, broad stripes all the way down. VΘ 3·20 m.

803. PLATE 49. Krater. H. 0·26 m. D. 0·288 m., 0·142 m. Similar. Rim inverted. Base is R. 369. Broader lines where the base joins. VH 3·25 m., and elsewhere.

DINOI

Seventh Century (Various Fabrics)

804. PLATE 49. R. 382 (R. pl. 25). A little more has been found. Dots and squiggles below, between fattish rays, not quite touching. Probably on a high foot; note the high barred handles. Not before 700 B.C.

805. R. 370. High foot *ajouré*. Illustration omitted. May belong to 804.

806. PLATE 48. Part of rim and handle. D. 0·16 m. (inside measurement). Pink clay, like the dinos R. 383 (R. pl. 24): white slip, red paint, unpainted inside. An elaborate swivel-handle.[304] ‘Running dogs’ on the rim; the rays [305] look a little later than those of 804. Groups of wavy lines; below, top of a ray. It may be East Greek. Nucleus 15, 3·50 m. There are bits of others similar.

807. PLATE 51. R. 599 (see R. pl. 45). Sherds have been added and a partial reconstruction attempted. There are fourteen leaves under the handles and two long rays on each side of the handles. Beside the point of one ray is the hind paw of a feline. There was a squatting feline on the other side and a creature between them; so a beast scene.[306] The foot was probably round, and the dinos may have stood [307] on R. 225 (R. p. 46). Date 675–50 B.C. Sherds found in VΘ and VM 2·90 m., and in W 6.

808. FIG. 12. Rim and part of body. D. of rim 0·18 m. The high base probably belongs. D. of base 0·14 m. Pale pink clay; base and body, the brightest scarlet; [308] excellent quality. Note the turned-up toe. Corinthian fabric, perhaps Late Protocorinthian.

UNCERTAIN SHAPES

809. PLATE 48. Two sherds from a thick open vase. Red clay, brown paint. Fore-legs of horses between cross-hatched objects. Perhaps Argive.[309]

810. PLATE 59. Sherd of similar technique. Eight-spoked wheels [310] between uprights. VS 3·20 m.

811. FIG. 9. Sherd. Pink clay. Dappled bull, standing left; back of a dog in the sky; hindquarters of another animal, masking those of the bull. Perhaps a kyathos. Nucleus 15.

812. FIG. 34. Sherd from body of a large vase. Red clay, black paint, white slip. Front legs of a feline, standing above a poor spiral. Probably a krater. Nucleus 15, 3·30 m.

813. FIG. 20. Part of shoulder and body. Red clay; fine yellow paint. Hatched bird; thick and thin lines at the foot. First quarter of the seventh century. Perhaps a tall-necked oinochoe like 992 (PLATE 23).[311] Wall 28.

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[299] *Cf.* the pattern on the oinochoe 925 (PLATE 55).

[300] *Cf.* the heavy curling-over rim, and the rim of the krater at Syracuse. *BCH* LX, pl. XI, a.

[301] The shape is like W. 135, even to the fillet below the off-set. Notice the fillet on the Syracuse krater mentioned above.

[302] *Cf.* 794.

[303] See *JHS* LXX 9. For the broad lines on the foot, *cf.* the foot of the big krater *BCH* LXXIV, pl. XXXIX 1.

[304] See pp. 265, 296 above, and 340 below.

[305] The general impression of the decoration recalls that of the vases with two-piece handles from Fusco at Syracuse mentioned above (*e.g. BCH* LX, pl. XI, b).

[306] *Cf.* the oinochoe 965 (PLATE 55), below; and the dinos *Ann.* X–XII 164.

[307] Robertson thought the stand was Corinthian, but all the patterns are Cretan and likely to be later than their Corinthian models. See the drawings Robertson, pp. 46, 48.

[308] There is a Late Protocorinthian oinochoe (967) and a conical oinochoe (1022) in a similar fabric.

[309] Cf. *Tiryns* I, pl. XV.

[310] *Cf.* the decoration of an open vase at Polis, *BSA* XXXIX, pl. 7, 35.

[311] *Cf.* the style of 1015 (PLATE 56) and the shape of R. 171 (R. pl. 10).

814. Scrap of rim and body almost to the base. Red Ithacan clay, coarse painting. Bad meander; dark below. Perhaps a kantharos on a high foot.

815. FIG. 16. Three sherds. Red Ithacan technique. Lines inside the rim; five friezes above large early rays. Extremely fine painting. Wall 26, 3·60 m. and elsewhere.

815*a*. FIG. 9. Bit of rim and sherds from body. Greenish clay and paint; rough. Base missing. Lines below pattern.

BOWLS WITH HANDLES ON INCURVING RIMS

This was a common shape in Mycenaean times, there were three at Polis.[312] R. 375 (R. pl. 25) is of this type, but it has a queer high foot, kicking up its toes, which is probably a late phenomenon.[313] There is a type of bowl, probably derived from the Mycenaean vase but with flattened rim and later fabric, *e.g.* one at Polis (unrecorded), and another just like it at Aetos in a latish context (816); it looks Corinthian. R. 291, 292 (R. pl. 23 and fig. 37) and the clearly Ithacan R. 393 (R. pl. 26) are the same kind of vase.

Our next number, 817, tells us what kind of vases they are. An inset lid fits it perfectly and matches the colour and the clay. The shape is nearly that of the classical lekane, and the fabric is that of the earliest kotylai. We can now add R. 41, 42 to our group.[314] It is closely related to pyxides, and so I have placed it with them.

There is a trayful of monochrome large rims with handles on or just below them.

816. FIG. 12. Bowl, handle missing. H. 0·108 m. D. 0·24 m., 0·08 m. Unpainted, coarse. The handle is just below the rim. Date uncertain. VN 2·70 m. Pithos 1, a late context.

817. PLATE 51. Bowl. Part of rim and one handle missing. H. 0·096 m. D. 0·20 m., 0·06 m. Corinthian clay. Rim and band below, reserved; leaves on rim. Paint fired black above, red below. The handle is from the other excavation, perhaps R. 41; it is splayed.[315] Period of the earliest kotylai; it has similar shading from red to black. VN 3·30 m.

817*a*. PLATE 51. Most unexpectedly the lid R. 115, with an inset, fits exactly; clay and paint are identical. Two reserved lines. The result is a lekane. LD.

PYXIDES AND LIDS

Round Pyxides.

There were two shapes in Athens in Protogeometric times, found together in Tomb 28 at the Kerameikos:

(1) Depressed rim [316] and high handles.
(2) Raised rim, flat on the top [317] and everted, no handles.

From these come the two types in Ithaca:

(1) Depressed rim, *e.g.* R. 70 or our 833.
(2) Upright rim, flat on the top, R. 385, our 818.

Probably both types continued side by side, but 818 is much the earliest in Ithaca.[318] I take it to be imported Early Geometric. R. 63 (R. pl. 5) is also of type (2) and just on the edge of Middle Geometric, parallel to our oinochoe 886. It is surely safer to take R. 63 as the ancestor of a purely Corinthian shape like the Tall Pyxis, than to look for one in Crete, as Payne did.[319] There is not much evidence of Corinthian influence in Crete before the seventh century, and none at all the other way. All pyxides with depressed rims appear to be Late Geometric [320] at Aetos.

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[312] Not illustrated, *BSA* XXXIX 10, no. 16. See Blegen, *Korakou* fig. 88.

[313] *Cf.* R. 363 and see p. 295. The only other kicking foot looks late in fabric, and has ridges on it, like the ridges on the orientalising neck R. 409, see R. pp. 73, 74, fig. 44; and see 950*e*, and FIG. 33.

[314] See Robertson, pp. 18, 19, fig. 10. See also his references.

[315] For the shape of the handle *cf.* W. 47, which is Early Corinthian Geometric.

[316] *Kerameikos* I, pl. 50. [317] *Op. cit.* IV, pl. 20. [318] *Cf.* W. 37, with a depressed rim. [319] *NC* 7.

[320] R. 70, as Robertson notes, is in extremely fine technique, and from the same set as R. 166. It is difficult to put them before 725 B.C. (see R. pls. 5 and 10).

Tall Pyxides.

Robertson thought that Tall Pyxides were contemporary with the earliest kotylai, but no Tall Pyxis has any claim to be Middle Geometric in fabric, none has the earliest kotyle-pattern of close chevrons; all have lines well down the body; consequently late in the third quarter of the eighth century seems the earliest possible date, and they may all belong to the last quarter alongside the Tall Kotylai. No solid rays at the foot; linear and not orientalising, probably hardly seventh century. R. 80 has both dots and bars on the handles,[321] perhaps the others had them too.

Domed Lids.

The rounder forms appear to be the earlier. The most angular (841) has fine lines, like orientalising kotylai and oinochoai with rays (*e.g.* 690 (PLATE 43), R. 136, R. pl. 8), and has hatched rays at the top. The lowest domed lid, 883*a*, is on a pyxis with a depressed rim and with a rather late meander.

The base of R. 387 has been found, and the height is about 0·12 m. There is a narrow dark patch at the foot. There is a kantharos in Corinth Museum of similar technique, and R. 387 (R. pl. 26) may well be from Corinth.[322] The wire birds suggest a date about 700 B.C. The large-sized box R. 394 (R. pl. 26) has a parallel in the ‘ tub-pyxis ’ from Asine,[323] which is not cylindrical as stated, but concave; it has wire birds, and is no doubt seventh century.

Pyxides with high and low rims died out earlier than the Tall Pyxides, and lids are likely to be a help as to date.

Flat Lids.

Lids start pretty flat, with flat rims, like the lid set on R. 70.[324] This lid also goes on 818, but is on the small side. The shape continued till the end of Geometric times, for we have several flat lids with lines all over, probably the sort of lid to suit R.71.[325]

Pudding-basin Lids.

This is the shape of the lekane lids which we have placed about 750 B.C. with the earliest kotylai; contrast the slope of the lid 846, which is probably later. There is a sturdier, hooked type of lid, the hook bending out, knob clumsy, rather more rounded than 825, which might be early. Note the pudding-basin lid 825 on R. 69.

Angular Lids.

Lids are angular towards the end of the century, *e.g.* R. 392 (R. pl. 26), *cf.* the lids of the cup-pyxides with wire-birds, *e.g.* 845.

CUP-PYXIDES[326] AND LIDS

Payne and Robertson call these kotylai-pyxides, but it is confusing to speak of kotylai with an off-set. They are cups by definition. The history of the shape is now clear. It begins about the time when the round pyxis stops, and continues till the sixth century. The dotted lattice of R. 72 (R. pl. 5), is not found on early kotylai, but is common on Tall Kotylai. Some Aetos fragments may, however, be earlier.

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[321] *E.g.* R. 113 (R. pl. 6) seems earlier than R. 112.

[322] On R. 115 and R. 393, see p. 298; on R. 384, see p. 304.

[323] See Persson, *Asine* 323.

[324] See 821.

[325] R. 71 (R. pl. 5) is from the same dinner-set as a tall-necked oinochoe like 971, PLATE 62 (not catalogued).

[326] This is probably the shape of Kraiker, *Aigina*, pl. 8, 150, there called a kotyle.

Cup-pyxis covers begin angular and grow flatter as they diminish in size. W. 153 is later than any of ours, but is welcome as carrying on the series.[327] Its date should be about 675 B.C., and lid W. 137 is very little later.

Lids of Low Pyxides.

With W. 137 go R. 86 (R. pl. 7) and our two lids with insets, 855 and 856. There are fewer lids with insets, and most of them are unplaced. Note, however, that there are quite flat lids about the middle of the century.

The box-lid 851 is a surprise, with its deep cover at this early date. It, too, must be near 700 B.C.

Knobs.

It is not possible to give a detailed account of knobs yet. Roughly speaking, they started nearly cylindrical, expanded at the top, and had a very boisterous period about 700 B.C., during which they turned a somersault. 'Diced acorns' on sober flat lids are found in the Middle Protocorinthian period.

The lids in the Black and White Style belong to the Middle Protocorinthian period, and are flat; among them is R. 399 (R. pl. 23), which is surely made in Corinth. A fragment was found in Nucleus 15. Its diameter is 0·122 m.

Early Geometric Pyxides with High Rims

818. PLATE 50. R. 385 (R. pl. 24). H. 0·224 m. D. 0·11 m., 0·148 m. Pink clay, glaze rather worn. The meander with parallel hatching looks early. Its dominant position round the middle of the vase is often seen in Attic Early Geometric. The reserved rim with a thread round it, and similar [328] leaves on it, looks to be from the same workshop as 715. The section is complete. Early and imported.[329] The base is stated to have come from the first metre.

The lid was probably like No. 821, which actually goes on, but is on the small side.

819. Fragment of an exactly similar base. D. 0·16 m., 0·148 m.

820. Fragment of a monochrome rim. D. 0·13 m. Buff clay; good dark glaze. Shape of 818. Several others.

Early to Late Geometric Pyxis Lids

821. FIG. 12. Flat lid.[330] H. 0·035 m. D. 0·10 m. Pink clay, thin paint. Dark glaze. Simple shape, abrupt contours. Fits the round pyxis R. 70. The lid of 818 was probably similar.

822. Another similar. D. 0·09 m. Fine fabric like R. 70.

Early Geometric Pyxides

823. FIG. 12. Pyxis rim. D. 0·11 m. Red clay; black flaky paint. Like the squat oinochoe 872 in fabric, and has similar three-rhythm decoration. Wall 27, 1·50 m.

Late Geometric Pyxides (Corinthian)

824. Pyxis rim. D. 0·14 m. Red clay, brown paint. Broad lines below the rim, leaves on it. Probably local.

825. PLATE 50. Lid. H. 0·055 m. D. 0·15 m. Monochrome, the streaky red of the early kotylai. Tall knob, rounded shape: it fits R. 69 (R. pl. 5), which has a pattern a little later than that of the earliest [331] kotylai, vertical wavy lines in metopes not quite touching above and below, horizontal stripes on handles. The colours match.

826. Middle of a large closed vase, like R. 63 (R. pl. 5), but later. Silhouette birds in metopes between double-axes; dark below. VZ 3·15 m.

827. FIG. 21. Rim of a round pyxis. H. (estimated) 0·26 m. D. 0·158 m. Pink clay, yellow paint; nice condition, added red on the rim. Meander between dotted diamonds [332] in a St. Andrew's cross. VN 3·15 m.

Base belongs: no join but an overlap. D. 0·099 m. Group of reserved lines half way down. VZ 3·00 m.

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[327] Cf. *NC* pl. 22,5. The lid has become domed again. In the sixth century the lekane supersedes it.

[328] These leaves are in groups of eight, the others undivided.

[329] For the technique *cf.* 715 (PLATE 45), R. 331 (R. pl. 21), which I believe also to be Early Geometric and imported, see p. 287; for R. 384 (R. pl. 24), to which Robertson compares it, see p. 304.

[330] *Cf.* the Protogeometric lids *Kerameikos* IV, pl. 20.

[331] There is a pyxis with the early chevrons: it has a flat rim and a narrow neck: shape of 833.

[332] They have the effect of a quatrefoil, *cf.* the hydria 867 (PLATE 53).

828. Pieces of rim. D. 0·12 m. Red clay, brown paint. Frieze of metopes. No doubt the lid had metopes too, like one which is too big for 828.

829. FIG. 9. Two large bits of rim and body. D. 0·20 m. Bright red clay; red-brown paint. Two friezes; top one with groups of vertical wavy lines, interrupted by horizontals. Nucleus 12.

829*a*. FIG. 9. 829 fits a large red lid. H. 0·058 m. D. 0·219 m. Reserved lines on knob, round it, and round the edge. The rhythm is dark–light: light–dark–light. This lid would also go on the red krater 796 (PLATE 48), with similar clay, but less well. The lid R. 97 (R. pl. 7) is like 829*a* in decoration.

830. FIG. 22. Section of a pyxis. H. 0·156 m. D. 0·144 m., 0·08 m. Light clay, grey-brown paint.[333] Neat drawing. Strap side-handles. It fits the angular lid R. 96 (R. pl. 7), which has had a hook added, and the colours match.

831. Bit of rim. Bird in silhouette, star. VS 3·0 m.

Pyxides with Depressed Rims (*mostly Corinthian*)

All upright handles of vases with Geometric decoration have bars.

832. FIG. 12. Half a pyxis. H. 0·155 m. D. 0·11 m., 0·08 m. Cream clay, black glaze. Thick. VΘ 3·10 m.

833. PLATE 50. Half a pyxis. H. 0·195 m., with lid 0·25 m. D. 0·10 m., 0·09 m. Red clay; good brown paint. Probably not Corinthian. Vertical handles. Solid thin meander. VΘ 3·25 m.

833*a*. PLATE 50. A small domed lid is a good fit. H. 0·055 m. D. 0·108 m. Lines all over. In Pithos 1.

834. Another small lid. H. 0·043 m. D. 0·086 m. Buff clay, poor paint. Finer lines, but coarser made than the last. Fairly high but not domed. Clay and paint exactly like R. 388 (R. pl. 26). The fit is not too good, but the pyxis shape is not certain. Groups of wavy lines on the shoulder.

Other Late Geometric Lids (*mostly Corinthian*)

835. Lid. H. 0·083 m. D. 0·19 m. Clay and painting like R. 392 (R. pl. 26). Plain lines all over.

836. Lid. H. 0·06 m. D. 0·114 m. Red clay and paint, broad lines. Domed but rather angular. A cross on the knob.

837. Flat lid.[334] D. 0·122 m. Knob missing. Nice red lines. Probably Corinthian. V4, 3·0–3·40 m.

A piece of a lid (D. 0·195 m.) with finer lines, but with an inset, fits a cylindrical pyxis R. 83 (R. pl. 7), but seems rather coarse for it. R. 83 is now nearly complete.

838. FIG. 13. Part of a lid. H. 0·055 m. D. 0·165 m. Green clay, worn. Wavy lines in groups. For the style *cf.* R. 45 (R. fig. 11); perhaps seventh century. Wall 28.

Tall Pyxides and Lids (*Corinthian*).

839. PLATE 50. Half a tall pyxis. H. 0·225 m. (with handles). D. 0·154 m., 0·08 m. Red clay, brown paint. Angular. Lozenge-chain between double-axes; bars on the upper part of the handle; brown at the foot. It fits the lovely lid R. 112 (R. pl. 6) exactly, but its condition is worse. The lid also fits R. 79 (*loc. cit.*), which has been partially made up. V8, 3·25 m. and elsewhere.

840. Part of a lid. D. 0·14 m. Pale clay. Frieze of vertical wavy lines interrupted by horizontals. *Cf.* R. 113 (*loc. cit.*). Wall 26, 3·70 m.

841. PLATE 50. Lid.[335] H. 0·15 m. D. 0·128 m. Pale clay, brown paint. Hatched rays near the top, very fine lines. The style of painting is like that of the powder-box lid 851*a*. VN 3·70 m. and elsewhere.

A knobless lid is awkward to handle.

Cup Pyxides and Hooked Lids (*mostly Corinthian*).

Splayed handles, probably all barred except the last.

842. Part of a lid. H. 0·06 m. D. 0·18 m. Grey clay; black and white with a touch of red. Groups of lines. Large knob with rifling, rounded shape like 834.

843. FIG. 10. Two pieces of rim with splayed barred handles. D. 0·144 m. Buff clay, dark red and black paint. Hatched bird, flanking two zig-zags; unpainted inside. Fits the next. Third quarter of the eighth century.

843*a*. Lid. H. 0·051 m. D. 0·156 m. Dark paint,[336] otherwise like R. 97 (R. pl. 7) outside. Dicing on knob, wavy lines on the turn, no spaces between them.

844. Half a pyxis. H. 0·092 m. H. with lid 0·155 m. D. 0·14 m., 0·05 m. Pale clay, unpainted inside. Rim rather tall. Nine curly wire birds; white line below; handles barred. Close to 845.

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[333] The technique is also like that of the kantharos-pyxis R. 387, which I believe to be Corinthian. See p. 299.

[334] *Cf.* the shape of the orientalising lid R. 399 (R. pl. 23).

[335] *Cf.* the lid of a Tall Pyxis in Thera, *AM* XXVIII, pl. XXXV 3; *VS* pl. XI 4. Ours is finer.

[336] *Cf.* Caskey and Amandry, *Hesperia* XXI, pl. 52, 174.

844*a*. PLATE 51. Lid. H. 0·07 m. D. 0·150 m. Rather steep. Diced knob, thick and thin lines[337] round it; group of bars on the edge. Fits the preceding.

845. FIG. 9. Half a pyxis. H. 0·084 m., with lid 0·123 m. D. 0·14 m., 0·056 m. Pale clay. Five wire birds, probably bars. Fits the lid R. 94 (R. pl. 7). Wall 28, 3·10 m.

846. PLATE 44. Lid. H. 0·038 m., with pyxis 0·09 m. D. 0·118 m. Red clay, ruddy brown monochrome paint. Flat. Matches R. 74[338] (R. pl. 5) exactly, and there are no others of this colour.

847. Pyxis. H. 0·077 m., with lid 0·105 m. D. 0·10 m., 0·046 m. Red clay, dark paint inside. Red below, with a reserved line; five wire birds. Strap-handle with wavy lines. VN 2·45 m. Fits the following:

847*a*. Lid. H. 0·035 m. D. 0·115 m. Knob mostly white; fine lines on the rim. Like R. 95, but finer.

848. PLATE 44. Lid. H. 0·04 m., with pyxis 0·09 m. D. 0·114 m. Yellow clay and paint. Flat. Bars on handle. Fits R. 75 (R. pl. 5), which has a continuous zig-zag in a panel.

849. Pyxis. H. 0·055 m., with lid 0·10 m. D. 0·11 m., 0·05 m. Clay red; paint bright. Two horizontal zig-zags. Matches the lid R. 93, which is heavier and perhaps earlier than the rest. The rhythm is dark–pale: pale–dark–pale. Unpainted inside. W4, 1·90 m.

850. PLATE 51. Lid. H. 0·042 m. D. 0·154 m. Pink clay, dark paint. Thick and thin lines, strokes on the rim. Rather an oldfashioned-looking rim. It should probably be placed earlier, perhaps with round pyxides.

Flat, heavy lid from Nucleus 15, 3·70 m.

Most of the other hooked lids can be fitted with possible cup-pyxides, but I desist.

Powder-Box Lid, Cylindrical[339] Pyxis.

851. Sherds from a lid. D. 0·17 m. Red clay, some good paint. Very fine work; mostly fine lines, hatched triangles round the edge, then uprights. Incomplete below. Nucleus 15, 3 m.

851*a*. FIG. 28. Knob from this or a similar pyxis.

Uncertain Shapes of Pyxis.

852. FIG. 16. The ‘Bricklayers’’ lid R. 400 (R. pl. 23) has developed a fantastic knob. The incision on the lid recalls that on the necks of closed vases,[340] but there seems rather much of it for the eighth century. Two string-holes in the knob. LD. Another similar from Wall 28.

853. Piece from the shoulder, frieze of swastikas.

Lids with Insets,[341] or Flat.[342]

854. Lid, no knob. H. 0·03 m. D. 0·09 m. Red clay, dark paint. The contrast between thick and thin lines suggests the early seventh century. Decoration like R. 95 (R. pl. 7).

Part of another similar from VN 2·35 m.

Concave Pyxides (Acorn Knobs with Dicing).[343]

855. Half a lid with a diced knob. H. 0·05 m. D. 0·096 m. Pale clay. It should be earlier than R. 118 (R. pl. 7). The rays are larger and the drawing more careful. Second quarter of the seventh century. Nucleus 12 and 15.

856. Part of another. D. 0·112 m. Lines less good; it has much the same red as R. 83 (R. pl. 7). V5, 3·05 m.

857. Knob. H. 0·04 m. Fine yellow paint.

858. PLATE 51. Lid. D. 0·19 m. Silhouette Molossian hounds, running; in the centre a goose.[344] A little later than 855.

PITHOS

859. PLATE 52. Pithos R. 401 (R. pl. 27). The other half of this pithos has appeared, and I publish a new photograph to show the high reserved rim, rather like pyxis 818 (PLATE 50), the zig-zag between the handles, and the four-rhythm reserved lines. Very red clay, like Cretan; good black glaze. I am sure it is imported, but I do not know whence or when. It looks to me early and Cretan, but J. K. Brock does not think it is Cretan and adds that, if it were, it would be late!

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[337] *Cf.* the lid *VS* pl. XI 2; *Perachora* I, pl. 25, 7, dated by Payne to the seventh century. Good photo in Lane, *Greek Pottery* pl. 11, B, where the date suggested is too early; for the bars, *cf.* 1061 (PLATE 62).

[338] *Cf.* W. 121, said to be of the last quarter of the eighth century. The fabric is not unlike that of the lekane 817 (PLATE 51).

[339] *Cf.* R. 394, 395 (R. pl. 26).

[340] See on 868 below.

[341] See no. 817*a* above.

[342] For R. 399, see p. 300.

[343] These lids belong to the Black and White Style, see p. 264.

[344] Cf. *Perachora* I, pl. 23, 8, for the goose; for hounds and goose, see *VS* pl. XLV 1; *cf.* also the kotyle 705. We have quite a fine Middle to Late Protocorinthian kennel and many of the hounds have been drawn: see FIG. 40.

AMPHORAE

Early Corinthian amphorae were oval and clumsy.[345] The Late Geometric 864 is slimmer even than R. 125 (R. pl. 8), which has been reconstructed rather short.[346] Amphorae, therefore, grew slim like Tall Kotylai. There were also, of course, Young's wide coarse 'Balloon'[347] amphorae at Athens, at the end of the eighth century, and one at least had patches on the shoulder like 860, but glaze and handles are different.

Amphorae with shoulder loops are uncommon in Corinthian pottery:[348] 865 and 865*a* are earlier and larger than any found hitherto. Note the sharply off-set shoulders,[349] and contrast the shoulders of Late Geometric hydriai.[350]

Early Geometric Amphorae

860. PLATE 52. Two handles and part of neck of an amphora. D. of outside lip 0·16 m. H. of handle 0·14 m. Very red clay; fine, black glaze. Two reserved lines below lip. The handles lean out and have a concave section. Probably imported; fabric like Early Attic.

860*a*. PLATE 52. Large pieces of body; reserved patches[351] on the front and back; similar in fabric to the last, and would fit it. Enormous vase.

861. PLATE 52. More of R. 404 (R. pl. 28) has turned up. It is similar to 860 but rougher, and the neck is shorter; the handles have the same section. Zig-zag on the neck, reserved line below handles and another on the body. It is a storage vase,[352] no doubt imported for its contents. H. now 0·40 m.

Late Geometric Amphorae

862. PLATE 53. Part of neck, handles, and body. H. 0·12 m. Reddish clay, dark paint. Wavy lines between uprights on neck and between the handles. Accurate painting.

863. PLATE 59. Neck R. 127 (R. fig. 19). Four groups of transverse strokes on the rim. Handles much higher than on R. 125; rim flat on the top; neck contracts at foot. Double-axe on each side, not evenly spaced with the handles, between uprights. Drawing careless.

Detached Chevrons set askew.

864. PLATE 52. Base and most of body. Clay reddish, like Corinthian; good black paint.[353] Lines come low on the body; continuous early-looking frieze[354] at the shoulder. The top part does not join, but the position is certain from the decoration on the shoulder, which is three times interrupted by a single line: so it is an amphora. The body is long[355] and slender.

864*a*. FIG. 32. Part of neck and body with the same decoration. Mark of vertical handle; the lines and chevrons on the neck are interrupted. *Cf.* the decoration of 865*a*, R. 405 (R. pl. 28). Corinthian fabric. W4, 1·85 m.

Amphorae with Shoulder Handles.

865. PLATE 55. Sherds from part of shoulder and body. Clay reddish; paint good. Mark of a horizontal handle close to the neck; wavy lines below. Lines come well down, dark at the base (not shown). Corinthian.

865*a*. PLATE 53. R. 405 (R. pl. 28). Neck and shoulders. Fabric close to R. 59 (R. pl. 4). Robertson deduced the shape[356] from the decoration (R. p. 74), and I confirmed it by finding the spring of a loop-handle that fits close to the neck and some of the bars that mark the other one. Diamond chain at the neck, cross-hatched triangles in front. Corinthian.

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[345] *E.g.* W. 35, 58; our 860, 861.

[346] *Cf.* the height of 864.

[347] *Hesp.* Suppl. II 22.

[348] *Olynthus* XIII P 1, pl. 1, is of this type. It must be Eretrian, under Corinthian influence (see Boardman, *BSA* XLVII 42, pl. 4, b 2), and has nothing to do with Cyprus. It is probably seventh century, whatever may or may not have been found inside it. An Eretrian vase in Olynthus is interesting. On loops see note 427.

[349] Cf. *VS*, pl. XIII 2.

[350] Cf. *VS*, pl. XIII 4.

[351] The pieces do not join, but have been placed by their distance above the group of three reserved lines below the handle. The patch joins on one side. *Cf.* the reserved patches on a three-handled jar at Polis, which I have suggested (*BSA* XXXIX, pl. 4, 13) may be under Geometric influence.

[352] Compare W. 35, and also *CVA* Athens I, pl. 3, 1, which has a similar zig-zag on the neck and a reserved line below the handle.

[353] The black-and-white effect, but not the shape of body, is like that of a closed vase recently found at Delphi, *BCH* LXXIV, pl. XXXIX 4.

[354] Cf. *loc. cit.* top, and our oinochoe.

[355] Contrast R. 125 (R. pl. 8).

[356] For the shape cf. *VS* pl. 13, 2; contrast the shape of Kraiker, *Aigina*, pl. 8, 116.

HYDRIAI

Robertson listed R. 384 (R. pl. 24) as a pyxis and compared it to R. 385 (our 818, PLATE 50). It is now clear that the bases are different as well as the handles. R. 384 resembles an Attic Protogeometric hydria,[357] a shape derived from it is also found in Corinthian [358] and Attic [359] Late Geometric. I believe R. 384 to be an imported Early Geometric hydria.

Mycenaean hydriai are round dumpy vases, and the shape continues with little change in the Protogeometric period. Delos kept it unchanged until the orientalising period. Athens developed a more elegant oval,[360] and from these our 866, 867 seem to be derived. Our squattest hydria 868 is also the latest.

The quatrefoil of 867 is in process of transformation from outline (*e.g.* 886, PLATE 51) to silhouette.

Late Geometric Hydriai

866. PLATE 53. R. 128 (R. pl. 8). Part of a hydria. A good deal more of this vase has been found, including a piece of the rim with five dark lines inside, and the other handle. The treatment is still broad, but the design has begun to break up. Corinthian.

Orientalising Hydriai

867. PLATE 53. Upper half of a hydria.[361] D. 0·13 m. Pale Corinthian clay; black and white paint. Neck curves more than the last; mastoi in front. Most complicated design. Lines inside neck, dots on the rim, zig-zag below. Metope of cross-hatched diamonds between thin double-axes. On shoulder, chain of dotted diamonds between uprights. Horizontal zig-zags over, between, and below mastoi; chain of dotted diamonds at the side. Body of snake round middle,[362] with no sign of a head. Broad frieze, quatrefoil between confronted birds, all in metopes. Corinthian. VZ 3·15 m.

868. PLATES 44, 51, and 53. R. 412 (R. pl. 28). Upper part of a hydria. A band of swimming mullet [363] fits on to this vase, as a pendant to the incised serpent. There is also incision on the neck, rather like the 'Bricklayers'' [364] lid, 852. The other handle exists, and a sherd, PLATE 51, which comes from the front below the creatures. Two broad lines inside the rim. Nucleus 12, 2·90 m. Perhaps Corinthian.

OINOCHOAI

Imported Early Geometric Oinochoai

Weinberg shows three shapes of Early Geometric oinochoai at Corinth:

(1) *oval* (W. 20) derived from a Protogeometric shape (W. 7).

(2) *bulbous* (W. 54).

(3) *squat* (W. 57), among the group of vases which Payne first detected as Early Geometric.

Weinberg thought no. 2 later than no. 1, but typologically it is earlier, being descended from a Mycenaean shape which appears in Sub-Mycenaean pottery at Athens. All three types occur in Ithaca.

Weinberg features a good many oinochoai with thin curving necks among his earlier vases. There are three necks like these in Ithaca, which have not been listed.

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[357] *Kerameikos* IV, pl. 24, inv. 2092. [358] *VS* pl. XIII 4. [359] *CVA Athens* I, pl. 4. [360] *CVA Athens* I, pl. 2, 10.

[361] *Cf.* Kraiker, *Aigina*, no. 116. It is probably from a hydria, not from an amphora. The handles are about at the same angle as 867, and the shape of the neck is similar. The necks of amphorae with handles on the shoulder, have a sharp off-set. See above p. 303.

[362] See Robertson on R. 458 (R. p. 77). There is a pink Corinthian-looking sherd with this motive and very fine painting: for it, *cf.* the style of 815 (FIG. 16). The birds are probably sketched in R. 67 (R. fig. 3). Robertson compares the birds of R. 64 (R. pl. 3), who appear to be scattering bird-seed: evidently part of a dinner-set.

[363] For the mullet, *cf.* the bottom of the oinochoe R. 171 (R. pl. 13), which has a hydra on the shoulder (R. pl. 10), like ours: another on the neck of 926 (PLATE 20). Mullet are also to be seen on R. 495, see our 1021, and of course there are many at Cumae. See also the hydra on the handle of R. 494 (R. pl. 34).

[364] Our 852, FIG. 16, R. 400 (R. pl. 23). See also the plate R. 559 (R. pl. 42). *Cf.* the lid at Cumae, *MA* XXII, pl. XLII 1. All the vases mentioned for comparison have very fine groups of lines, all may be Corinthian.

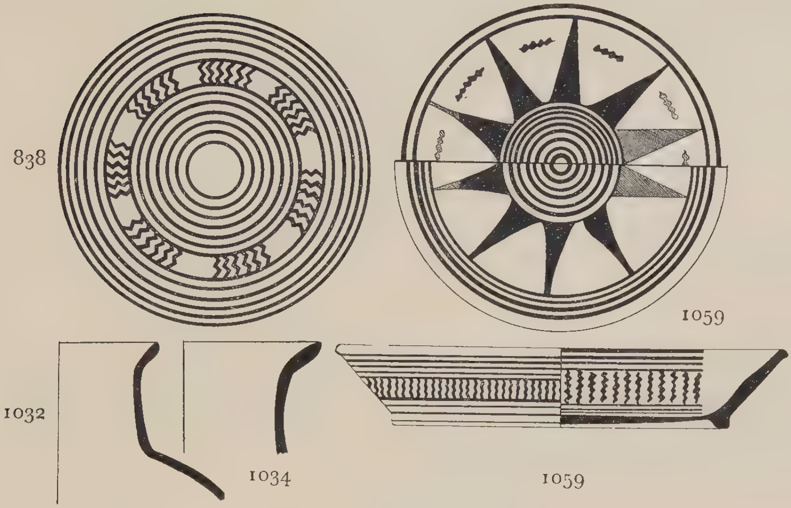
838
1059
1032
1034
1059

Fig. 13.—Lid, Plate and Sections. (Scale 1 : 4.)

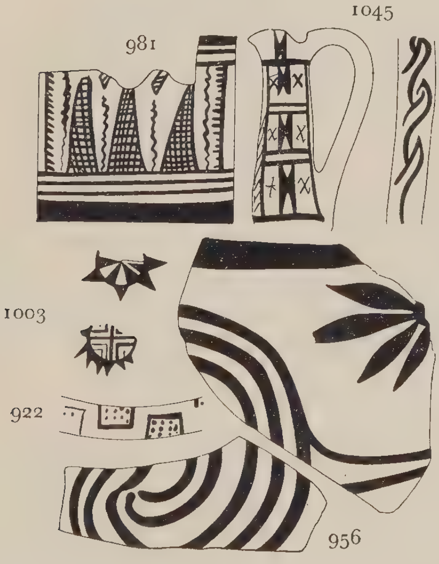
981
1045
1003
922
956

Fig. 14.—Patterns of Ithacan Vases. (Scale 1 : 4.)

Local Early Geometric Oinochoai

The quality of the fabric is poor and the paint is fugitive. The fabric is either thin and brittle, or thicker and soft, but all of it jagged in the break. It is all difficult to mend, and the fugitive paint makes it hard to assemble, which explains why it has not been detected before. The decoration is either in groups of three reserved lines or monochrome. It seems to be the local reaction to the pottery already described, and it is probably contemporary with it. Some of it may be Corinthian. Miss Lorimer says there was Corinthian Geometric pottery in the 'Cairns'.[365]

Corinthian Middle Geometric Oinochoai

None as large as 881, 882 has been found at Corinth. Big storage vases would not be put into graves or wells. Probably they came to Ithaca with their contents. 882 is particularly like W. 73 in technique, and the patterns are identical. The clay is red, but no redder than W. 73.

It is difficult to know where to draw the line between Middle and Late Geometric, but in Corinth Museum new patterns, goose,[366] quatrefoils, and inscribed tangential circles occur in the dark-on-light fabric. So 883–90 have also been catalogued as Middle Geometric. No local vases could be ascribed to this period.

Handles (all periods)

Corinthian oinochoai handles bend in at the base, and tend to be narrow there, in contrast to the handles of aryballoi, which are rounded, and stand well away from the neck. The few Protogeometric handles from Aetos are wide-flung, and this seems to be a characteristic of handles in the native technique (*e.g.* R. 432, R. pl. 29), and even of Ithacan tall-necked oinochoai, *e.g.* R. 499 (R. pl. 35). It is not certain how far this characteristic can be used as a criterion of the origin of Corinthianising oinochoai. If it is reliable, the miniatures 869–71 will not come from Corinth; but *cf.* the handle of W. 20.

Shapes of Late Geometric Oinochoai

The three types Oval, Squat, and Bulbous continue. The Oval slims and loses its awkwardness, and sometimes retains traces of the early thin neck, *e.g.* 891 (FIG. 24); see the orientalising oinochoai 925 (PLATE 55), 923 (FIG. 25), 948 (FIG. 27). Type 3 becomes a Squat Oinochoe. The Bulbous goes through an awkward form with a conical[367] neck like R. 129 (R. pl. 8), or 900 (our PLATE 59), or becomes egg-shaped (*e.g.* 944, PLATE 44), and finally the regular Protocorinthian pear-shape R. 136 (R. pl. 8). Later still it is again Bulbous.[368] Late in the Late Geometric period a black shoulder is common.

Oinochoai in Red Ithacan Technique

R. 432 (R. pl. 29) alone is complete; it looks primitive, but must be rather late, for lozenges were not invented in Ithaca. They should probably be derived from leaves, an orientalising motive from the Eastern Mainland. The scheme of decorating a reserved neck is derived from the local Protogeometric; yet such necks should probably all date from the second half of the eighth century. The wide-flung handle of R. 432 and the shape of the neck may have been influenced by those of flat-bottomed oinochoai,[369] or of bulbous oinochoai like 910 (PLATE 57).

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[365] *BSA* XXXIII 28.

[366] See no. 886 (PLATE 51).

[367] See p. 317 below.

[368] See Payne *NC* fig. 10, and our 966.

[369] The hangover W. 130 also belongs to the second half of the eighth century; see p. 266 above.

The wavy lines in the groups on the shoulder of R. 440 (R. pl. 30) are like slugs, and it should be about the date of W. 124; the rest of the lozenge on R. 440 has been found.

Orientalising Oinochoai

These are all Corinthian or Corinthianising.

Linear.[370]

Nos. 924–62 are mostly large vases which combine orientalising features with more or less coarse Geometric painting. Nearly all have friezes of groups of wavy lines[371] on the shoulder. Many are flamboyant, *e.g.* 956, FIG. 14. There are endless bases showing thick lines above rays.

Jazz Oinochoai.

Most of these have reddish clay and dark paint, well applied. They do not look Corinthian, but some may be from Corinth. Shapes vary: most of them seem rather bulbous, 940 (FIG. 23) is oval, and so is R. 443,[372] which belongs to this class, with its bands of long rectangles. It probably has one reserved stripe on dark, near the base, which would make it early in the series. There are few close parallels for these patterns on other shapes, but there is a general resemblance to patterns on smaller vases at Cumae. Many of them have groups of wavy lines above dicing in the Corinthian manner.

Dotted Loops.

This pattern seems to have developed from the loops and volutes of vases[373] of the Cumae Group. It is common in Ithaca, and some of the vases[374] are certainly Corinthian. With the elaboration of our vases contrast the simple, single volute of the jug from Punta del Tonno[375] and note its un-Corinthian shoulder. The same simplification has been at work on the serpent round the neck: contrast R. 454 (R. pl. 30), which, however, may not be Corinthian.

Oinochoai with Figure Scenes.

R. 456 (R. pls. 30, 31) takes its place close to our 934 (FIG. 26). The fine greenish clay is similar, and the painting is Corinthian. A base with medium rays probably belongs. The birds of aryballoi[376] at Cumae date it probably shortly after 700 B.C., but in the first Bf. style. R. 467 (*loc. cit.*) had plain lines of about the same coarseness, more of which have been found; no doubt it ended in long rays, and is in the second Bf. style.

It is interesting to have a vase of another shape painted by the Aigina Hound Painter, 965.[377]

Late Protocorinthian Oinochoai

A new sherd added to R. 461 shows that the body was black. The shape will then be like 966, and the dots and outline rays suggest Argos.[378] Fragments of bulbous brown bodies, with a little added white, may be still later.

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[370] This division is purely for convenience.

[371] These friezes are always divided both on this and on other shapes, by two or more lines. The Punta del Tonno sherd (Δρᾶγμα 461, no. 1) has only one line.

[372] Not illustrated.

[373] See *VS* pl. VII; W. 129; see n. 427 below; also Dunbabin and Robertson, above p. 174.

[374] 951, 952, FIG. 28.

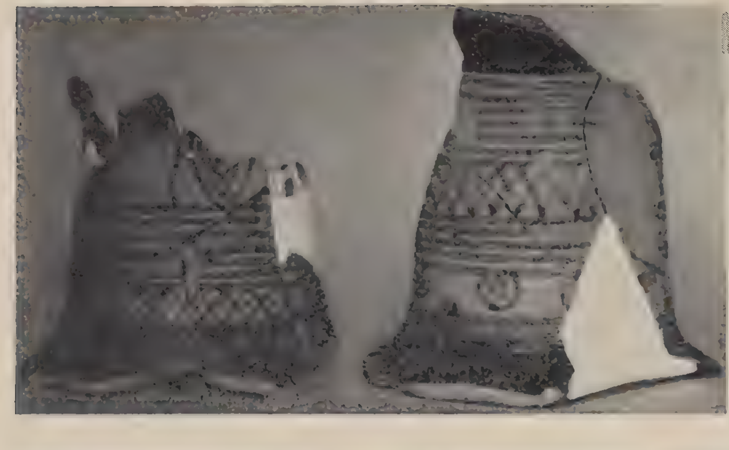
[375] See p. 264. Perhaps this jug is Chalcidian, from Chalcis.

[376] *Cf.* Cumae, pl. XLVI 2.

[377] See below p. 317, also above, no. 696.

[378] See unpublished vases at Nauplia. Robertson compares the three-handled mug R. 358 (R. pl. 23). Argos was also fond of three handles.

913 914



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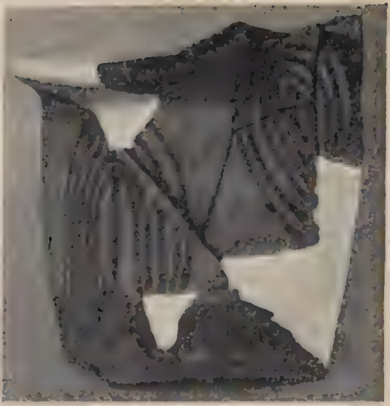

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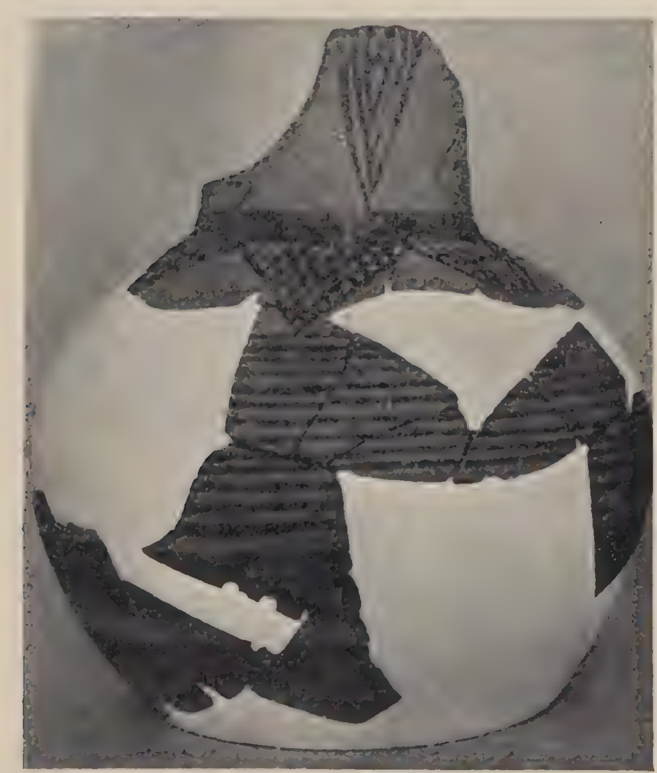

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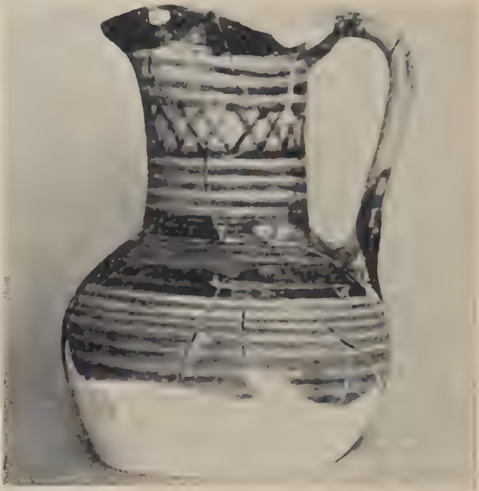
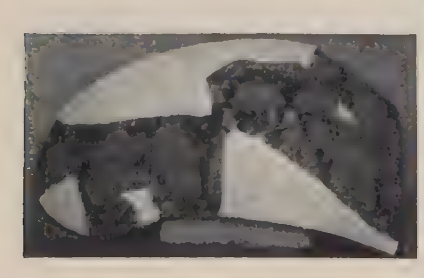
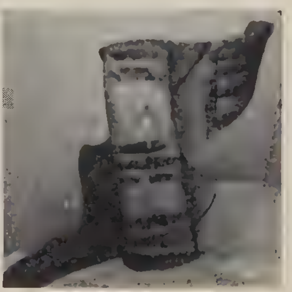




950i



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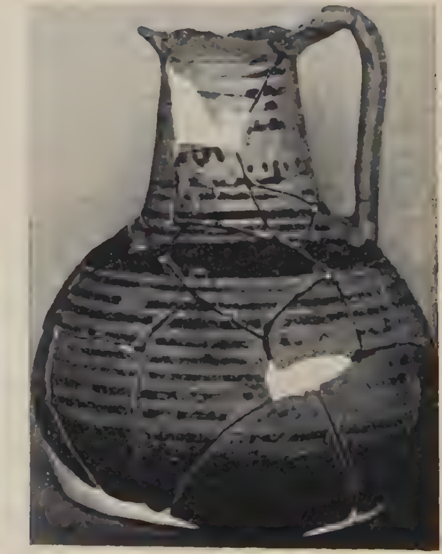

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FIG. 15.—OINOCHOAI. (SCALE : 913, 914 (1 : 3); 1031 (2 : 5); 950*i*, 1069 (1 : 4); rest 1 : 2.)

Early Geometric Imported Oinochoai

Three Miniature Oinochoai

869. PLATE 44. H. 0·095 m., black paint (Type 1, Oval).

870. Similar. H. 0·106 m., reddish paint (Type 1).

They are like W. 56, but there is no panel on the neck; there would not be room. The foot is flat with a ring just adumbrated outside; see above for handle shape. The clay is pale and perfectly Corinthian. Four lines below the handle. Weinberg says this is unusual, but it is common in Ithaca. The shape stands between W. 20 and W. 24.

871. PLATE 44. R. 487 (Type 2, Bulbous). The clay is reddish; monochrome paint. The base is characteristically Corinthian; red Corinthian potter's mark, and an offset in the centre. Same handle.

Squat Oinochoai (Type 3).

872. PLATE 44. Part of base and body of a wide-bottomed oinochoe. D. 0·11 m. Red clay; good paint. Four groups of lines. It may be Attic.[379] W4, 1·70 m.

873. Another similar base. The paint has a purple tint. It also looks Attic. Wall 28.

874. Top of a similar vase with spring of neck. Similar clay and technique.[379a]

875. PLATE 44. Primitive-looking lip. Coarsely painted meander.[380] VH 2·70 m. and W 2·15 m.

Early Geometric Oinochoai in Local Technique

876. FIG. 22. Base and body. H. 0·17 m. D. 0·10 m. Three sets of reserved lines. Reddish clay. Oval body, uneven thickness; the shape of the base looks Corinthian; red potter's mark. W4, 1·85–2·00 m.

877. FIG. 19. Part of neck and shoulder, strap-handle. Yellow clay. Two reserved stripes on neck. W4, 1·90 m.

878. FIG. 33. Parts of two or more oinochoai, found in the hearth and all over the excavation, so brittle that they defied restoration. Groups of three reserved lines at 0·02 m. distance from each other. No base preserved; bits of several trefoil necks, all of which seem to have had meanders. H. of neck 0·09 m.

879. Oinochoe neck[381] and part of body. H. of neck 0·06 m. Yellow clay. Flat strap-handle. Three reserved lines below the handle. Bulbous type. A base, 0·082 m., may belong.

880. Part of base. D. 0·082 m. A large spreading body may belong but does not join. Clay, purple; poor streaky paint. Undecorated. In the hearth.

There are many fragments of container vases, in bad condition and of uncertain shape, which probably belong to this period.

Corinthian Middle Geometric Oinochoai

Oval Storage Oinochoai.

They still have panels on neck and shoulder.

881. PLATE 54. Oinochoe. H. 0·56 m. D. 0·156 m. Clay, greenish; surface red at the break. Black paint, much damaged; red paint below. Decoration like the following, except that it has no double-axes: meanders on neck and body. The oval body[382] melts into the tall neck. Three-piece[383] curving handle; it has mastoi. Five groups of reserved lines. The decoration is close in style to the krater W. 73 and to that of our own krater 787 (PLATE 48). VZ 3·20 m.

882. PLATE 54. Oinochoe R. 444 (R. pl. 30). Red clay. I show the thin meanders and a new piece on the neck. Note the dots on the rim. Three instead of five groups of reserved lines on the body. The neck decoration is more elaborate; a new pattern, double-axes, appears. The photograph shows the fine quality of the glaze, which still has a severe black-and-white effect. It seems certain that it was imported from Corinth. Red potter's mark on the base,[384] which looks Corinthian.

883. PLATE 44. Lower part of neck. Clay like that of 881, but it belongs to a thicker larger vase. More lines below the decoration (chevrons), than in Weinberg's earlier oinochoai. Again it looks rather Attic.

884. Parts of another neck, with a panel in the dark, may belong to this period.

885. PLATE 54, FIG. 24. Neck and body. H. 0·27 m. Clay, buff; paint, lighter in colour. Two-piece handle. More robust meanders; panel fills nearly the whole shoulder. The inscribed triangles on the breast are also an Ithacan[385] motive. They have hafted double-axes between them (FIG. 24), and a double-axe at either end, with an inscribed cross-hatched triangle below, but not above: an intelligent modification of a Protogeometric pattern to suit the shape of the vase. The three-line rhythm has given way to a broad band of lines, only one frieze of wavy lines. Sloping shoulders, but an offset at the neck. VΘ 3·10–3·20 m.

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[379] *Cf.* W. 33. For a vase of Attic fabric at Corinth *cf.* W. 45.

[379a] There was a table covered with miscellaneous sherds from vases of this type or a little later.

[380] *Cf.* the painting of the meanders in pyxis 818 (PLATE 50), or of the meander hooks on W. 70.

[381] *Cf.* 877, FIG. 19.

[382] *Cf.* the clumsy shape of 869 above; 882 (R. 444) is neater.

[383] *Cf.* the handle of W. 70. The shoulder decoration is like W. 73.

[384] See no. 616*a* and *cf.* *Perachora* I 54 and 58.

[385] *Cf.* the kantharos 732 (PLATE 46).

886. PLATES 51 and 54. Another. H. 0·34 m. Clay, red; paint like the last. Two-piece handle, divided down the middle and curving. Body and neck more differentiated than in 882, and lip shorter. Inscribed zig-zags are the favourite neck pattern of Corinthian Early Geometric oinochoai: these are smaller and more closely set (fragments of two other necks with this pattern). New patterns are dotted diamonds, quatrefoil, here with inscribed triangle filling,[386] goose stepping among swastikas.[387] The style of these patterns is Corinthian, close to R. 63. I have no doubt that this and 885 are from Corinth. VN 2·70 m.

Friezes of Small, Compass-drawn Circles.[388]

887. PLATE 59. Sherd. Yellow clay, purple paint, good and smooth. Small compass-drawn dotted circles,[389] short tangents, thick lines. Imported. Probably from Corinth. W6, 1·80 m.

888. PLATE 59. Sherd. Same clay. Frieze of inscribed (two line) circles touching; dot in centre. Circles larger than the last. VN 2·80 m.

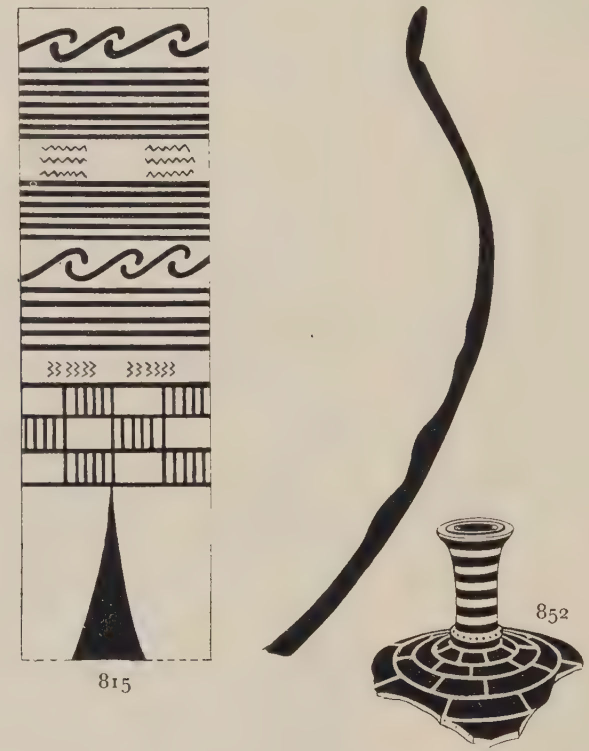

FIG. 16.—VASE AND LID. (SCALE 1 : 2.)

889. PLATE 59. Sherd from the spring of the neck. Clay white, like Corinthian. Frieze of inscribed circles (two line) with dots, short tangents. Later than the last two vases.

890. Sherd. Reddish clay and paint. Three line inscribed circles, thinner lines, longer tangents. 3·20 m.

Late Geometric Oinochoai

Corinthian Style.

891. FIG. 24. Oinochoe. H. 0·35 m. D. 0·10 m. Worn red clay; a little pink paint, perhaps a white slip. Thick handle with bars, long lip. Oval shape like 881, but slimmer; thin neck. Hatched meander-hooks [390] in centre of neck; on the rest, thick lines. Lattice at spring of neck. Under the influence of fine painting. Probably local. VZ 3·20 m.

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[386] *Cf.* R. 63 (R. pl. 3).

[387] This kind of bird occurs in Corinth on a Middle Geometric amphora, T 2412, P 1338.

[388] This pattern occurs on a Middle Geometric vase in Corinth Museum.

[389] The drawing and fabric are like those of the Middle Geometric krater 789 (PLATE 48).

[390] Meander-hooks in a wilderness of lines bring us to the Tall Cup style and we see that this shape, too, is lengthening out.

892. PLATE 54, FIG. 32. Oinochoe. H. 0·28 m. D. 0·084 m. Pale reddish clay. Sloping shoulders; flat, frilly lip; oval body; tall thin neck. Plain brown lines on neck; diamonds [391] in metopes [392] on the shoulder; trident in red on base; may be Corinthian. VZ 3·10 m.

Patterns will be taken in the same order as those of cups.

Meanders.

There were many Late Geometric necks with meanders, but they were too fragmentary to be recorded. Two large closed vessels had meanders on the body.

Plain Lines.

893. PLATE 59. Base and body. D. 0·08 m. Reddish clay, brown paint.[393] Broad band at handle level. Bulbous. VZ 3·20 m.

There are several tall necks with plain lines only.

Diamonds.

894. PLATE 58. Oinochoe. H. 0·34 m. Pale clay, yellow paint. Dumpy body, straight neck. Panel of five sets of two superimposed diamonds in the front of the neck.[394]

895–7. FIG. 19. Three other rather straight necks, one from Nucleus 12, 3·0 m.

898. PLATE 59. Fragment of neck with inscribed [395] dotted diamonds.

899. PLATE 57. Another with cross-hatched [396] diamonds.

899*a*. FIG. 24. Scrap with cross-hatched and inscribed diamonds alternately.

Disintegrating Spirals.

900. PLATE 59. Conical neck with ‘ running dog ’ and broad stripes; light clay which looks like Corinthian.

901. PLATE 59. Conical neck and sloping shoulders. Probably Corinthian clay. ‘ Sigmas ’ in a panel in front, broad band at handle level. VZ 3·15 m.

902. PLATE 59. Piece of neck. Clay like Corinthian, yellow paint. Reversed [397] ‘ s’s ’.

Vertical Wavy Lines.[398]

903. Neck and part of body [399] of a red oinochoe. Pale Corinthian clay. Conical neck. Interrupted frieze on shoulder; on neck, horizontal wavy lines between dots,[400] interrupted by vertical ones. Effect of continuous frieze. Pithos 2. H 2·70 m.

904. Neck and a piece of shoulder. Cream clay; light yellow paint. Neck less conical. Interrupted friezes.[401] VZ 3·15 m.

905. Neck and some part of shoulder. White Corinthian clay; good black paint. Oval body; short straight neck. Good continuous frieze in middle of neck and at the handle; black below. VZ 3·30 m.

Glazed Oinochoai.

906. PLATE 57. Oinochoe. H. 0·18 m. D. 0·09 m. Rough red clay; fugitive brown paint. One reserved band below the handle. Oval well modulated foot.

907. Part of a similar but larger oinochoe. H. 0·27 m. Most of the neck missing, but it is probably conical. Wide and clumsy round handle; flat base. Probably local. VZ 3·30 m.

Small, Bulbous Oinochoai with Metopes.

908. FIG. 29. Neck and shoulders. Clay reddish. Black paint comes well down the neck, and the decoration of the body stops at the shoulder; wavy lines in metopes between three sets of uprights; neat painting. Corinthian. Nucleus 12, 2·90 m.

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[391] I use this word in its more popular sense, the card players’ diamond. Robertson calls them lozenges. I keep that word for a rounded figure, Robertson’s ‘ mandorla ’.

[392] This is an early instance of metopes on the shoulder, not yet very obvious. Of course it is a poor vase, and it may be later than it looks.

[393] Technique matches the cup 634.

[394] The technique and style are like those of Tall Cups; see 642 (PLATE 41).

[395] Many of these necks may belong to the seventh century, *cf.* the neck of Lane, *Greek Pottery*, 13A. Geometric style continues, see p. 264. See also diamond-chain on a Late Geometric pyxis, Lane, *op. cit.* pl. 7B.

[396] We have already met these on cup 644 (FIG. 7). They appear on an obviously orientalising neck 930, with rays at the foot. The technique of them all is much alike.

[397] *Cf.* cups 648–50, similar technique.

[398] This pattern is a favourite on local kantharoi, 741, 745 (PLATE 46).

[399] For the shape and the shoulder pattern *cf.* R. 131 (R. pl. 8).

[400] *Cf.* the pattern of W. 102.

[401] *Cf.* the neck of W. 105 for the pattern.

909. FIG. 29. Similar. No lip or handle; thin conical neck. Decoration comes lower; metopes between four sets of uprights. Nucleus 16, 3·30 m.

910. PLATE 57. Small oinochoe.[402] H. 0·15 m. D. 0·06 m. White clay, purple paint.[403] It looks Corinthian. Wider straighter neck; wide handle; flat base. Similar decoration.

Red Ithacan Technique.

911. FIG. 15. R. 441 (R. pl. 30). Part of oinochoe. Usual red clay and paint. Three cross-hatched triangles on the shoulder, linked by lines behind;[404] lines below and a reserved line in the dark portion. In kotylai this reserved line belongs to the last quarter of the eighth century. Bulbous like 910.

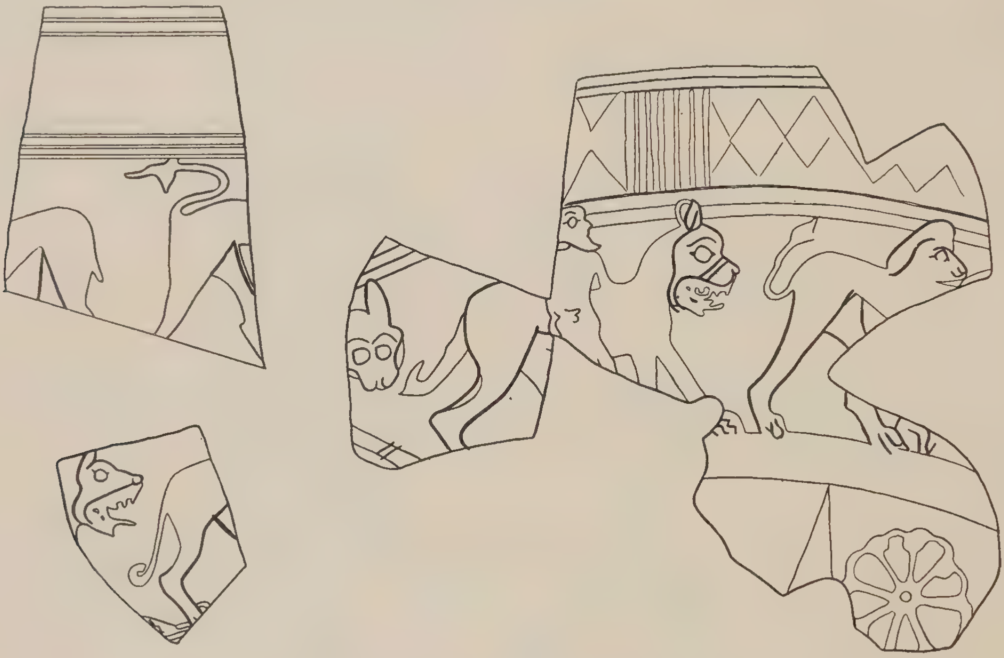

FIG. 17.—KOTYLE 695. (SCALE 1 : 1.)

Necks.

912. FIG. 15. Part of short neck. Lozenge and Mycenaean pattern. One groove. Nucleus 15, 3·35 m.

913. FIG. 15. Neck. H. 0·11 m. The top half reserved, inscribed lozenge[405] on it; frieze of diamonds with dots, dark band on shoulder. Three grooves[406] round neck. V4, 2·95 m.

914. FIG. 15. Neck. H. 0·146 m. Probably by the same hand as the last. No reserved space. This is the only large neck with pot-hooks.[407] Same grooves. V4, 3·28 m.

915. FIG. 15. R. 438. Base lost. Same technique. The lines are large for so small a vase.

916. Upper part of an oinochoe, base missing. Body oval. Like the last, on a larger scale. VZ 3·10 m.

917. Sherd at the shoulder. More pointed cross-hatched rays in a panel, a solid ray at the side, near the handle.

918. Similar. Solid rays near the handle; groove on the neck. Lower Deposit.

919. PLATE 57. Sherd from body. Wide spreading body, sharply off-set neck. Groups of two long wavy lines in a frieze.[408] This motive is probably not Corinthian, though it may be evolved from Corinthian patterns.

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[402] For the shape, cf. *Hesperia* 1948, pl. LXXV C 4. Vases like 908–10 may have inspired small dumpy oinochoai from Finocchito, Åkerström, pl. 2.

[403] Like the paint of kantharos 745.

[404] There is the same curious system at the back of R. 440 (R. pl. 30).

[405] *Cf.* the pattern on aryballoi found in a Geometric tomb in Rhodes, *Clara Rhodos* VI–VII, 46 and 49, tombs VIII and X. The context of Tomb X is orientalising. *Cf.* the pattern on the front of the Griffin Jug, *JHS* XLVI, pl. VIII.

[406] Compare the next and also R. 452 (R. pl. 28).

[407] *Cf.* R. 308 (R. pl. 18), R. 473 (R. pl. 33) or R. 476 (R. p. 79).

[408] This pattern occurs on the cut-away neck R. 427 (R. pl. 27); also on kantharoi; *cf.* R. 329 (R. pl. 20). See also 1006.

920. Two sherds from the shoulder, part of neck and body. The neck has a lozenge. Pairs of horizontal long wavy lines on the shoulder; lines round body.

921. PLATE 57. Sherd from the shoulder. Groups of diamonds. This is a Corinthian pattern.

922. FIG. 14. Sherd from shoulder. Frieze of outline blocks filled with dots.[409]

No later oinochoai in this technique.

Corinthian and Corinthianising Oinochoai

Oval with a Thin Neck.

923. FIG. 25. Oinochoe.[410] Top and base do not join but overlap. H. (estimated) 0·37 m. D. 0·104 m. Reddish clay, yellow-brown paint. A horizontal wavy line above verticals is unusual; reserved line on base. Drawing very fine. Probably Corinthian. Nucleus 15.

Orientalising Oinochoai

Metopes.

924. FIG. 29. R. 442. Oinochoe, neck missing. H. 0·29 m. D. 0·112 m. Pale clay. Shoulder has four metopes;[411] decoration like 925. The lower part of the body has one reserved line. Shape like 928, but the shoulders are more sloping.

925. PLATE 55. Oinochoe R. 451. (Lip from VS 2·65 m.). H. 0·35 m. D. 0·11 m. A small snake on one of the five shoulder metopes. Panel of inscribed diamonds in the front of the neck. Broad bands[411] at the base. There is another similar base.

Fine Cross-hatched Diamonds on Neck.

926. PLATE 59. Neck and part of shoulder. Clay reddish, but Corinthian. Frieze on the neck is wider than that of 925; slim double-axes between uprights, fine cross-hatched diamonds in front panel.[412] Narrow snake[413] on shoulder with incised spots. Below, groups of wavy lines; tall neck. Certainly Corinthian.

927. FIG. 27. Neck and shoulders. Estimated H. 0·40 m. Reddish clay and paint. The neck is shorter than that of 925 and the painting on it finer; two friezes of degenerate wavy lines at the shoulder, of exactly the same style; similar clay and colouring to 948. The shapes would fit, and give a graceful neck on a tall oval body. I believe it to be Corinthian.

Circumscribed Rays round Neck.

928. FIG. 23. Oinochoe, neck missing. H. 0·25 m. D. 0·11 m. Reddish clay; good brown paint; neat drawing. Egg-shaped. A zig-zag line between alternate rays.[414] Two of the usual friezes below the shoulder and one low down; reserved line on dark. Shoulder from VΘ 3·30 m.

929. FIG. 29. Shoulder. Slightly redder clay, but the painting is almost identical with 959 (PLATE 56).[415] Two circumscribed lines on the rays, dicing round the middle of the vase. Probably second quarter of the seventh century.

There are half a dozen other necks with circumscribed rays.

Serpents.

930. Body of an oinochoe, no base or neck. Clay reddish. Serpent on the shoulder, winding round cross-hatched diamonds; a ray just appears at foot; below serpent, three broad friezes with groups of straggling wavy lines.[416]

930*a*. PLATE 57. Similar shoulder.

Dicing and Serpent.

931. FIG. 23. Breast of a large oinochoe. Softish pale clay; good red and black paint. Four rows of dicing; an early type of wavy line in two friezes; snake on shoulder. Nucleus 15, 3·20 m.

There are many others, see 934.

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[409] *Cf.* the neck of a primitive-looking oinochoe, found in grave XXII at Cumae, with Orientalising and fine Geometric globular oinochoai, *MA* XXII 235, fig. 79.

[410] Fragments of similar vases W. pl. 15. 923 fits into the Corinthian sequence between R. 131 and 136 (R. pl. 8).

[411] *Cf.* aryballoi with broad bands of the early seventh century, which are like this oinochoe in shape, *e.g.* R. 236 (R. pl. 12).

[412] *Cf.* 927.

[413] *Cf.* Cumae 334, fig. 135, 8; pl. XXXVIII 2. Ours has no dots and a more arrow-like head. *Cf.* R. 171 (R. pl. 10), which has broad bands at the foot like 925; also the hydria 868, see PLATE 53, p. 304 above.

[414] For solid circumscribed rays, *cf.* R. 456 (R. pl. 31). The birds on the latter are like those on Cumae aryballoi, and are probably seventh century. See p. 263.

[415] For the 'S's', *cf.* Cumae, pl. XLI 5. The rays are like those of R. 467 (R. pl. 31), the big oinochoe with the deer, which must belong to the second quarter. It no doubt had tall rays below. There is part of a base, with solid rays and incised diamonds, which would suit. See 950*c*, FIG. 33.

[416] *Cf.* style of 886, but these wavy lines are in groups. The rays were probably pretty long. It is similar in style to 943 (PLATE 55), and also to 930*a*. See also the plate 1058, PLATE 62.

Dark Base and Fine Lines.

932. Oinochoe.[417] H. 0·215 m. D. 0·076 m. Corinthian clay. Usual frieze below handle; base dark. Characteristic Protocorinthian oinochoe, neat and well-balanced shape. VZ 3·40 m.

933. Neck and part of body of a similar oinochoe. H. 0·17 m. Corinthian clay; red paint, lines only. VZ 3·00 m.

Jazz Oinochoai.

934. FIG. 26. Bits of shoulder; a neck may belong. Red clay, poor paint. Note the close analogy to the decoration of R. 456 (R. pls. 30 and 31). Rectangular [418] dicing; the wavy lines are neater, the solid meander-hooks very long. The neck was evidently much higher than R. 456. Probably Corinthian.

935. FIG. 23. Jazz oinochoe. D. of base 0·12 m. The fragments do not join, but they overlap and they certainly belong to one rather heavy vase. Their relative position has been determined by the decoration. Clay, light and thick; good brown paint. Small solid rays round the neck,[419] two rows of large dice; wide frieze of huge Z's.[420] This is the earliest oinochoe in Ithaca with lines down to the base. Nucleus 12, 3·20 m.

936. FIG. 24. Sherds with similar Z's from an oinochoe with dicing above. Red paint.

937. FIG. 24. Fragment from middle of a smaller oinochoe. Dark paint. Frieze of solid diamonds,[421] set obliquely, below Z's of a more reasonable size. Lower Deposit.

938. FIG. 24. Shoulder. Large rays from the neck, three rows of enormous dicing, the last row unevenly spaced.

939. FIG. 24. Shoulder. Row of dicing and squiggles, two rows of small hanging rays; poor painting.

940. FIG. 23. Tall neck and shoulders (perhaps R. 449). Pale clay. Oval; the neck is quite straight and the shoulder comes abruptly off it. Leaves round the neck; below the shoulder one row of very big dice.

941. FIG. 24. Sherd from shoulder. Pointed rays from neck; row of small fat rays pointing up and down; frieze of squiggles between vertical wavy lines.

942. PLATE 59. Sherd from centre of neck. Light clay. Pointed rays up and down.

Solid Rays on Base.

As mentioned above, the point of a ray appears on 930.

943. PLATE 55. Base with eight fat short rays, and body. H. 0·265 m. Clay reddish. Base quite flat below. Two friezes of wavy lines like 930, 930*a*. H. of rays 0·065 m. Looks Corinthian.

944. PLATE 44, FIG. 19. Base to the shoulder. H. 0·28 m. D. 0·12 m. Clay, reddish; paint gone. Shape like 928, but shoulders slope more. Probably 'running dog' at the top; neat frieze like the shoulder metopes of 924, three usual friezes of wavy lines, twelve rays a little above the base. The lines are fine. Probably Corinthian.

There are about half a dozen bases with short rays and an impossible number with long rays; the latter cannot be dated much before 675 B.C. I can list only a few.

Long Rays at the Base.

945. Base and shoulder. H. 0·18 m. Decoration, rays and fine lines like R. 136 (R. pl. 8), but probably later, the rays are much longer. Certainly Corinthian.

946. Similar. H. 0·17 m. Rays more pointed and more of them. VS 2·15 m.

947. FIG. 19. Shoulder and part of a ray. Coarser vase with similar fine lines. Clay has a greenish tint. 'S's above ray (not shown); groups of wavy lines below handle; line with cross-lines in centre of shoulder. Compare also the fine lines of the big kotyle 690. Nucleus 15, 3·50 m.

Ornaments between Long Rays.

948. FIG. 27. Oinochoe. R. 455. D. 0·094 m. Bright scarlet.[422] Swastikas. A good instance of the tenacity of the Geometric style: see under 927. Probably Corinthian.

949. Rays near the base. Clay red and brittle; thick white slip. Three horizontal wavy lines.[423] It belonged to a large vase.

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[417] Shape between R. 131 and 136 (R. pl. 8): later than 923.

[418] Compare the square and rectangular dicing with loops, on the big kotyle R. 303 (R. pl. 17); similar dicing on a pyxis from Afrati, containing a round quatrefoil aryballos, *Ann.* X–XII 151; *cf.* also the handle of an oinochoe from Cumae, *VS* pl. VIII 6; for the diamonds *cf.* Lane, *Greek Pottery*, pl. 13A. The Rhodian jug opposite is jazz too.

[419] *Cf.* the rays round the neck of the 'Griffin' oinochoe R. 142 (R. pl. 9); *cf.* also the rays on local, tall-necked oinochoai, *e.g.* 1000 ff.

[420] Compare the little z's on the stand R. 225 (R. fig. 32).

[421] Cf. *AM* XXVIII, Beil. XXXIV 3, from Thera, Corinthian amphoriskos with small rays on the shoulder and oblique diamonds on the neck; *cf.* also an early Attic amphora, *CVA Berlin* I, pl. 3.

[422] For fabric and colour, *cf.* the plate 1065, R. 265 (R. pl. 15, our FIG. 33).

[423] *Cf.* R. 304 (R. pl. 17) for the fabric. There must have been four dotted diamonds (the orientalising ornament that appears on Delian hydriai otherwise painted in Protogeometric style) in the reserved frieze of this kotyle.

Other Ornaments between Rays.

950. (*a*) FIG. 33. Outline diamond.[424]
(*b*) Solid diamond.
(*c*) FIG. 33. Incised diamond.[425]
(*d*) FIG. 33. Z's.
(*e*) FIG. 33. Violets.[426]
(*f*) FIG. 28. Double-axes.
(*g*) FIG. 8. Dots (between reversed rays).
(*h*) Horizontal zig-zags.

Demented Rays.

(*i*) FIG. 15. Three rows of hanging rays of two sizes. LD.
(*j*) Sherd. Greenish clay, three rows of rays going different ways. Nucleus 15, 3·40–3·70 m.

Volutes and Dotted Loops.

951. FIG. 28. Part of base. D. 0·088 m. Beautiful white Corinthian clay and yellow paint. On another piece, near the base, a great volute [427] is just beginning. Long rays not touching.

952. FIG. 28. Shoulder. Good red paint; Corinthian. Remains of five long volutes, probably figure-of-eight. Rays round the neck. Nucleus 15, 3·30 m.

953. Neck. Dip between neck and shoulder.[428] Similar to the others, with a narrow frieze of wavy lines in the centre; loops all round. Certainly Corinthian.

954 Parts of body. Clay red; thick fabric. Loops with circles inside, all over an enormous vase (perhaps two vases), divided by a line [429] in the middle. No incision. Nucleus 15, 3·90 m.

955. Parts of shoulder and body of a still larger vase, with a dip towards the neck, divided into two registers by two sets of two broad lines; in upper register, volutes in figure-of-eight. Probably Corinthian. VF 3·50 m.

956. FIG. 14. Parts of neck, shoulder and body (the neck and body may not belong). Soft pink clay. On neck, dot-rosettes between groups of diamonds; on shoulder, crossing lines. Below, a thick line, then pointed rosettes and a whirligig. For the whirligig, *cf.* R. 521 (R. pl. 38). Rosettes appear below the thick line and the net above it, on the same sherd. A sherd with a rosette has part of the whirligig. The neck was found along with the other sherds in Nucleus 15.

957. FIG. 34. Sherd from shoulder; piece of neck may belong. Pale greenish clay. Figure-of-eight; two rows of intertwined volutes with centres. The scrap of neck has volutes below and incision above. Nucleus 15.

958. Scrap of neck with volutes. Light clay.

Inscribed Diamonds.

959. PLATE 56. R. 457 and R. 459 (R. pl. 32). Present H. 0·28 m. Light clay, good paint. Base has been found, but does not join. D. 0·12 m. Reserved line below rays. Dotted pointed cross-hatched ray on shoulder.[430] The linked diamonds are effective as a centre motive; their centres are incised. Corinthian. Second quarter of the seventh century.

There are bits of another base, with ' s's ' between the rays.

960. Front of neck with much coarser inscribed diamonds. Pale clay. Incised dot at centre of diamonds.

961. FIG. 26. Scrap of neck. Same clay but thinner. Similar diamond; dot in the middle is painted. Two little birds.

Twist.

962. Sherd from shoulder. White clay. Twist,[431] diamond below, then usual friezes. Seems Corinthian.

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[424] *Cf.* Cumae, pl. XLVII 1.

[425] See Cumae, pl. XLI 2.

[426] *Ibid.*, pl. XXXVI 3.

[427] For this and the following, *cf.* the shoulder and base of the Griffin oinochoe, R. 142 (R. pl. 9); for the body, see Lane, *Greek Pottery*, 13A. The neck was probably like 926 in shape. The rays at the foot of the Würzburg vase are early. *Cf.* also Kraiker, *Aigina*, no. 212; also *BCH* LXXVI, 336, fig. 10, from Megara Hyblaea.

Corinthian loops are to be distinguished from others by the wonderful certainty of the drawing. Contrast Lane's oinochoe with Δρᾶγμα 461, 3, with *Olynthus* XIII, pl. 1, P 1, or R. 382 (R. pl. 25). See also p. 307. Dunbabin and Robertson (above p. 174) attribute this vase to the Cumae Group (no. 8). The group must have lasted a long time, for these rays are much more developed than Cumae Group no. 1 (Cumae pl. XXX).

[428] *Cf.* R. 136 (R. pl. 8); for the loops, *cf.* Lane, *loc. cit.*

[429] *Cf.* our kotyle 690 (PLATE 43), which is certainly Corinthian. All these vases may be Corinthian, *cf.* R. 464 (R. pl. 32). Even R. 463 (R. pl. 32), bad as it is, is like a vase found at Corinth, W. 156.

[430] *Cf.* 929 (FIG. 29), which was long thought to belong. The technique is like the aryballos R. 247 (R. pl. 14), and the designs have the same elements. Similar inscribed diamonds in added white appear on Shear's krater, *AJA* XXXIV 411. See also the inscribed diamond in added white on the neck of R. 135 (R. pl. 8). For long circumscribed rays at the foot, *cf.* Caskey and Amandry, *Hesperia* XXI, pl. 50, 65.

[431] Cf. *Délos* XVII, pl. VIII, B b 1.

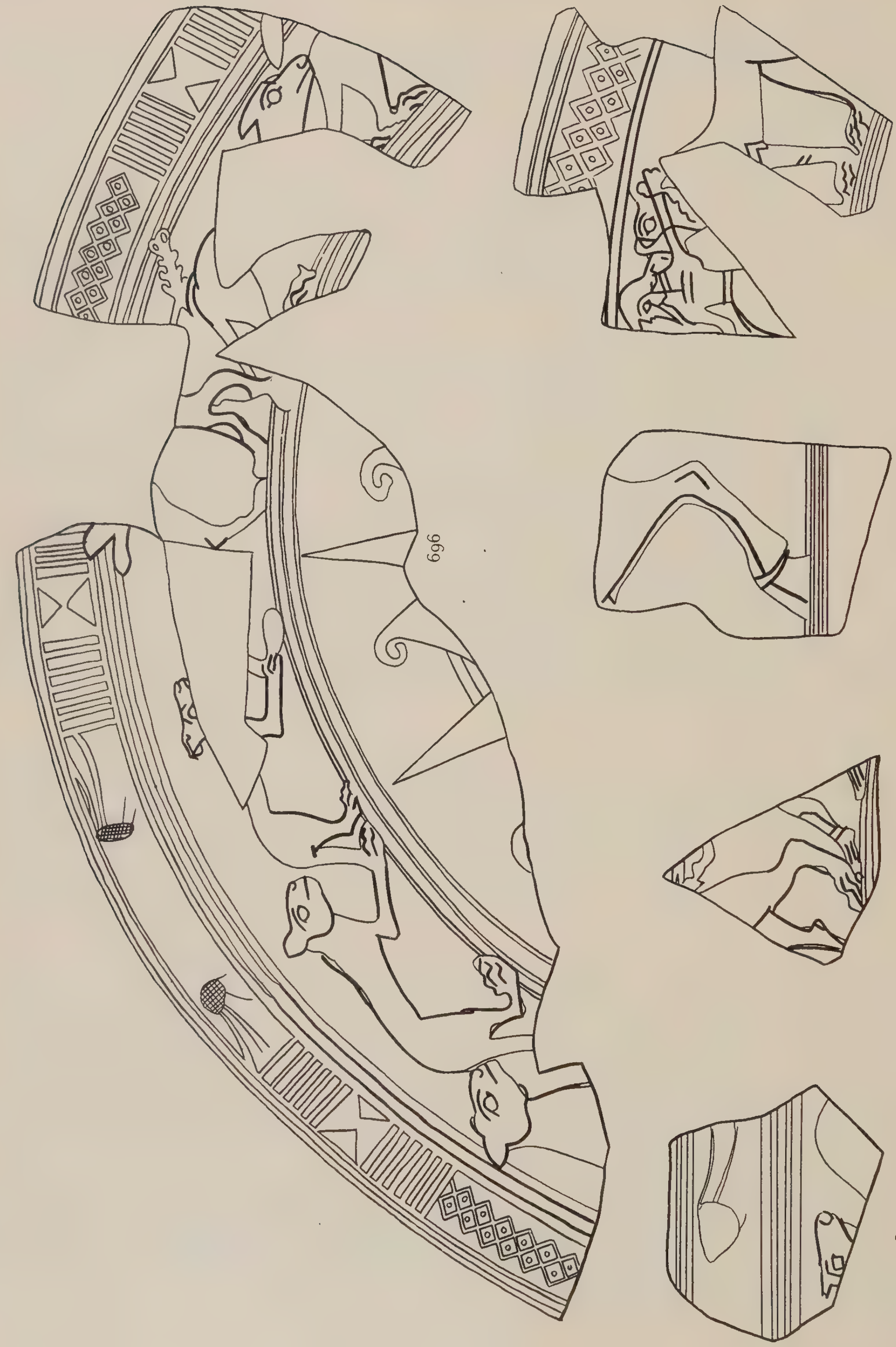
696
693
701
697b
697a

FIG. 18.—SHERDS FROM KOTYLAI. (SCALE 1 : 1 APPROX.)

Oinochoai with Figure Scenes.

963. PLATE 23. Part of neck. Clay, red; paint, dark and worn. Bird in a free field with a harlequin wing,[432] and a filling of horizontal, wavy lines. Last quarter of the eighth century. By a painter of the aryballoi with outline figures.

964. R. 466 (R. pl. 32). The scorpion is really chasing the quadruped, the sherds join. Not Corinthian.

965. PLATE 55. Base and part of body. Very red clay; animals black, rays red. A lion with a seal-like body, roaring behind an enormous hare.[433] Lion's upper jaw and tongue at the top. Second Bf. style. Wide shape. By the Hound Painter. Base from former excavation. Nucleus 15.

Late Protocorinthian Oinochoai

966. Oinochoe. H. 0·255 m. D. 0·078 m. White clay, sealing-wax red paint.[434] Incised tongues on neck; short narrow rays at foot. Short neck and high triple-divided handle. The bulbous oinochoe [434a] once more. Upper Deposit.

Black Neck.

967. *Cf.* 966. White shoulder, black neck. Red clay; flat shape. Six solid rays, a broad line below. The style of the rays [435] shows that this neck is not geometric, and the deliberate seeking of a black-and-white contrast suggests the middle of the seventh century. Nucleus 15, 3·70 m.

TALL-NECKED OINOCHOAI

Bodies of early tall-necked oinochoai appear to have been both (1) oval, and (2) bulbous. Our earliest examples 968, 969 are rather bulbous. They may be Early Geometric, they are in the dark and light technique, but the neck of 968 is offset. R. 489 (R. pl. 29) goes closely with these, but may be Ithacan because of its redder clay, straighter handle, and angular shape.

Weinberg noticed the resemblance of these vases like R. 489 (R. pl. 29) to his W. 48, but did not notice that they had trefoil lips (our aryballos 1047, PLATE 59 was not in the *ILN* publication).

971 may be in Late Corinthian Geometric technique, with brown and yellow paint, but it has an exact counterpart at Corinth [436] in Middle Geometric painting. This kind of vase is the forerunner of many Late Geometric vases in Italy.[437] Both the later bulbous and oval vases in Ithaca can be derived from this type, and all have later decoration. There is no complete vase with a bulbous body and an off-set neck in Corinthian Geometric style, but all the necks seem to be shortish, *e.g.* 973 with hatched triangles in four metopes. Some vases listed by Robertson are lost: R. 170, 174, 175. R. 172 (R. pl. 11) must be a domed lid with a tiny knob; there is only 0·005 m. from the centre not roofed over. R. 171 (R. pl. 10) shows the bulbous form and the long conical neck established, but its base decoration belongs to the pear-shaped aryballos period, that is the seventh century. None of the oval vases with Geometric decoration has a canonical long neck, so it seems rash to assume that R. 166 (R. pl. 10), the body of which is now seen to be oval, is earlier than the late eighth century. Dark glaze vases can be made at any time, and this one is definitely in very fine technique.

There is more uncertainty about many of the non-Corinthian vases. 979 would seem to be a caricature of R. 171, and we should not let its Protogeometric patterns mislead us as to its date. 989 is another freak, but thin lines, low down, suggest the same period. Some bases in red Ithacan may belong to bottles,[438] and would suit a shape like R. 474 (R. pl. 33).

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[432] Compare the wings of the cocks on aryballoi *PV*, pl. 6. For horizontal wavy lines, *cf.* Cumae pl. XLI 1, 3, orientalising globular oinochoe; *cf.* also this design on bird kotylai. 1036 may also belong.

[433] Robertson pointed out to me that this was probably a hare, and J. M. Cook that the other creature is certainly a lion. There are three kotylai probably by this painter (ref. under Kraiker, *Aigina* no. 252). For the large hare, *cf.* our 696 and note the too small deer by this painter (*Aigina* 48). Our creature is roaring with tongue out. *Cf.* Kraiker's lid no. 263, pl. 20, another work by this hand. The incised leg on that lid may belong to another large hare.

[434] *Cf.* the dinos 808 (FIG. 13).

[434a] *Cf.* W. 181.

[435] *Cf.* W. 133 and 166.

[436] See below no. 971.

[437] See above p. 264. Hence Etruscan conical necks.

[438] *E.g.* 987. See also under 1025.

A parallel to the shape of R. 483 has now appeared in the Kerameikos. It is in the form of two oinochoai one above the other. From the clay R. 483 might be Attic, but, as Robertson says, the decoration is Ithacan.

It is easy to derive the shape of orientalising Ithacan vases like R. 499 (R. pl. 35) from the oval type; 993 is a connecting link and may be Corinthian; it is egg-shaped like 928 (FIG. 23), with the same base scheme, reserved line on dark, linear decoration above; it has small solid rays on the shoulder. Certainly a Corinthian model existed: 992 cannot be far away. Short necks are conical and plain, the most complicated vases have usually the longest necks, often decorated; [439] this is probably a late feature. All the handles are wide flung, in contrast to conical oinochoe handles. Nearly all have the same pointed solid rays at the neck, and they should be dated to the first quarter of the seventh century. Most are definitely in the red Ithacan technique (*e.g.* 1000), some have a lighter surface (*e.g.* R. 499), one, 1001, has added red, a rarity in Ithaca. To Robertson's comments I would add that nothing destroys the balance of line and shape like a piece of plaster, not to mention cracks. None of these vases has a fair aesthetic chance. R. 510, our 1003, looks pretty wild now and so do our 1000 and 1001, not to speak of the 'Seascape' (1005).[440] They are not so restrained after all.

The linear vase R. 519 (R. pl. 35) derives rather well from our bulbous Late Geometric oinochoe 972, so it may after all be early in the sequence.

Early Geometric Oinochoai with Tall Necks

968. Oinochoe. Part of body missing. H. 0·105 m. D. 0·047 m. Reddish clay, dark paint. Longer neck than the miniature oinochoai. Five reserved lines below a narrow curving handle. See the next.

969. PLATE 58. Oinochoe. H. 0·092 m. D. 0·048 m. Like the last, but the handle is striped and wider. Probably Corinthian.[441] VS 2·95 m.

970. PLATE 57. Upper part of oinochoe. H. 0·11 m. Reddish clay, brown paint. Neck striped [442] and conical, wide-flung handle. Three reserved lines below the handle, one stripe on it. Probably local.

Many others.

Middle or Late Geometric Oinochoai with Tall Necks

Corinthian Style.

971. PLATE 62. Oinochoe.[443] H. 0·136 m. D. 0·048 m. Pink Corinthian clay; good golden-brown paint. Conical neck. Wavy line frieze a little later than that on the big storage vases, but still continuous. Red potter's mark below. Certainly Corinthian.

Late Geometric Oinochoai with Tall Necks (mostly Corinthian)

Bulbous.

972. PLATE 58. Oinochoe, no lip or handle. H. 0·161 m. Red clay, good quality of brown paint. Rather poor small wavy lines in a continuous frieze. Probably Corinthian.[444] Pithos 1.

973. PLATE 57. Short neck and shoulders. Reddish clay, yellow paint. Four cross-hatched triangles between metopes. Corinthian.

973*a*. Section of the lower part of a similar vase. D. 0·08 m. Interrupted wavy lines at shoulder, dark below. Corinthian.

Oval.

974. Oinochoe. H. 0·145 m. Pale clay, poor black paint.[445] The shape is slimmer than any of those drawn. Lines half way down. No frieze. Pithos 1.

Another from Pithos 2.

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[439] Connections with Protocorinthian vases have been stressed by Robertson. The long rays on the body of 1002 (PLATE 21) are particularly close to those on R. 162 (R. pl. 9).

[440] This vase looked hideous in small pieces, but now it has been picked out for commendation by more than one of the modern artists who have visited the museum.

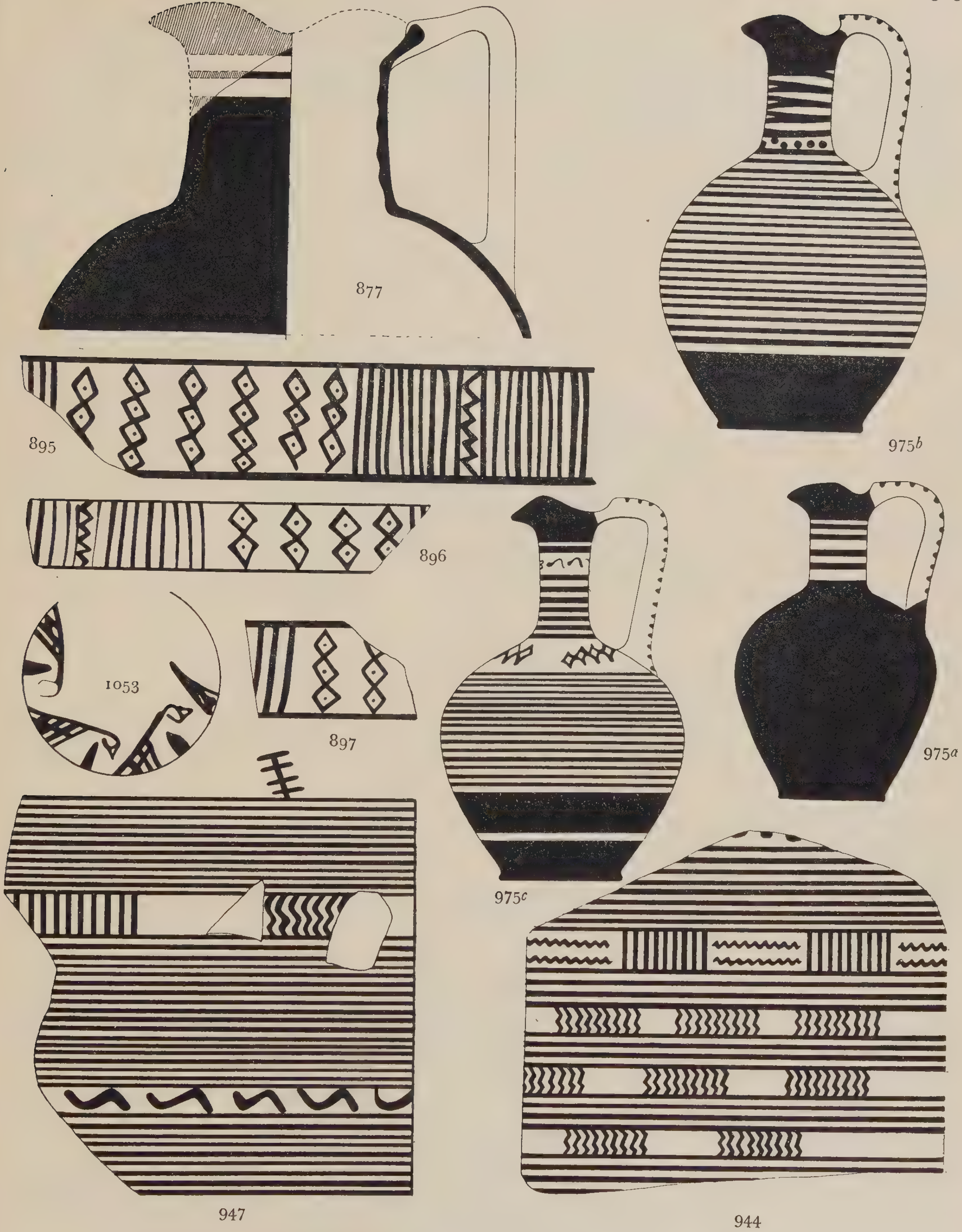
[441] The shape of the body, but not of the lip, is like W. 48. The general appearance is like the large oinochoe W. 56. The neck seems earlier than that of the conical oinochoe W. 76.

[442] *Cf.* W. 76.

[443] KR 168 in the Corinth Museum is exactly like 971, except that it is bright red like W. 73, not golden-brown. For Italian contacts see p. 264 above and p. 327 below.

[444] For the shape, *cf.* T2455, P1425, in Corinth Museum. The shape fits in with R. 171 (R. pl. 10), which is perfectly Corinthian. 972 may be under Attic influence, *cf.* the shape of *BSA* XXXIII, pl. 23, 14, from Canale.

[445] Same 'dinner-set' as R. 71 (R. pl. 5).


877
975b
895
896
1053
897
975c
975a
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944

Fig. 19.—Oinochoai and an Aryballos. (Scale 1 : 2.)

975*a*. FIG. 19. Complete oinochoe. H. 0·105 m. Yellow clay. It is the logical development of the big storage oinochoai, but perfectly proportioned, without any clumsiness. Lines on neck and handle only. From the shrine.

975*b*. FIG. 19. Another. H. 0·136 m. Lines well down; dots on the neck.

975*c*. FIG. 19. Another. H. 0·125 m. Groups of diamonds in panel on shoulder and neck.

976. Oinochoe, base missing, R. 166 (R. pl. 10). H. 0·17 m. Lines, one reserved line on dark; longer neck.

Uncertain Shape.

977. PLATE 58. Part of neck and shoulder. Pale clay, yellow paint. Cross-hatched diamonds and hatched triangles, points upwards. Wall 26, 3·70 m. May be seventh century.

Ithacan Tall-necked Oinochoai

Bulbous.

978. Oinochoe. H. 0·131 m. Handle missing. Red clay. Dark glaze, except for cross-hatching on the neck.[446] Shape like the following. It was found inside a pithos, so certainly in the shrine.

Ithacan White Technique.

979. PLATE 55. Oinochoe. R. 479. Clay, white [447] but coarse; paint, black. For shape and scheme of decoration, *cf.* R. 171. For congruent triangles on the shoulder, *cf.* 1015, PLATE 56. There are many similar handles: it is wide-flung and heavy.

980. Part of neck, shoulder, spring of handle. Same clay. Thick handle and neck; same handle as the last. Fine lines down the body; cross-hatched triangles on shoulder, and long ones on the neck.

981. FIG. 14. Neck, lip missing. H. 0·10 m. The broad band round the foot of the neck is found on all Ithacan Protogeometric pouring-vessels; hairy lines [448] are not usual except on Protogeometric or earlier fabrics.

982. Neck and handle. H. 0·12 m. Paint gone. Flat shape. Three long triangles,[449] one hairy line on neck; divided and barred handle; swastika and cross-hatched triangle on shoulder. Nucleus 15, 3·40 m.

983. PLATE 58. H. 0·105 m. Similar clay, thicker. Lip black. Decoration reduced to three pointed triangles. Points of two cross-hatched triangles on the shoulder.

Red Technique.

984. Neck. H. 0·085 m. At foot, broad band; frieze of pot-hooks; six lines. The top is like R. 432 (R. pl. 29), an inscribed lozenge on the sides, in front strokes, so it provides a link with the big oinochoai. VN 2·10 m.

985. PLATE 58. Neck. H. 0·075 m. Broad and short like 973 (PLATE 57); uncertain shape. Same decoration of the top as 984; below, cross-hatching all round like 978. VH 2·70 m.

986. Fragment of a neck with two grooves [450] at the foot and three in the middle. Broad band and two rows of pot-hooks. Very coarse fabric. Might be from a torch-holder.

987. Base to turn of shoulder. H. 0·063 m. D. 0·092 m. Well modelled foot.[451] Broad band at the foot, lines. VZ 3·10 m.
Another from VN 2·30 m.

988. PLATE 58. Neck. H. 0·07 m. Vertical chain of inscribed lozenges, strokes between; cross-hatched triangles below the shoulder. Nucleus 16, 3·60 m.

989. PLATE 58. Oinochoe. R. 477. Clumsy primitive shape, but the lines are fine; so it cannot be early.

990. PLATE 58. Neck and handle. H. 0·12 m. Frieze of uprights and crosses at the handle; dotted diamonds on the neck; inscribed lozenges at the top, dots between. The shape is flatter than the photo shows.

991. Another similar. Diamonds on the handle.

Corinthian Orientalising Tall-necked Oinochoai

992. PLATE 62. Fragments. Red paint. Base, hanging rays above rays; dotted serpent with a good head; four lines of dicing; sacral tree [452] beside mark of neck; octopus in a metope on the handle may belong. Deep grooves inside. Mostly from Nucleus 15. The drawing is the finest in Ithaca, and certainly Corinthian; the lines are finer than those of 1016 (FIG. 31). The neck may be like the fine neck 1017*a* (FIG. 31); the clay is similar. The shape may be oval or egg-shaped.

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[446] *Cf.* 985, PLATE 19.

[447] For fabric, *cf.* the kantharos 734, PLATE 47.

[448] See on p. 317 above.

[449] *Cf.* the decoration of the next. These are longer and thinner.

[450] *Cf.* the grooves on the necks of the big oinochoai 913, 914 (FIG. 15).

[451] *Cf.* also R. 473 (R. pl. 33). This is smaller and has more lines.

[452] Contrast the Ithacan sacral trees R. 510 (R. pl. 37), and R. 534 (R. pl. 39). For the octopus on the handle cf. *VS* pl. 3, 5.

Ithacan Orientalising Tall-necked Oinochoai

993. PLATE 56. Oinochoe. Lip and most of handle missing. H. 0·14 m. Red clay. Short conical neck, egg-shaped body. Thin lines on body,[453] straight rays round neck, dark base with a reserved line. Nucleus 15, 3·40 m. This shape can be derived from 972 above. Perhaps Corinthian.

994. Neck, part of shoulder and body. Perhaps a lozenge on lip; usual barred neck, outlined twisted rays, then four lines; frieze with rectangular blocks 0·035 m. apart. Spring of a barred handle. Narrow lines, reserved at foot. Similar shape. Nucleus 15, 3·60 m.

The only other vase with a Geometric-looking body is R. 519 (R. pl. 35). It has no rays and stands rather outside the tradition.

995. Part of neck, shoulders and handle with bars. Red clay. Short neck. Broad simple rays, dark middle. VN 2·30 m. Probably the top of R. 520. This will also be early in the series.

996. Neck and shoulders. An undistinguished example of a palmette and reeds. Vertical lines on handle; hatched curls coming down from boundary line. Nucleus 12.

Birds in Reeds.

997. R. 509. Made up after Robertson's fine drawing (R. fig. 47). The bits join.

998. Base. D. 0·045 m. Birds' feet on either side beside reeds. *Cf.* 997. VΘ 2·90 m.

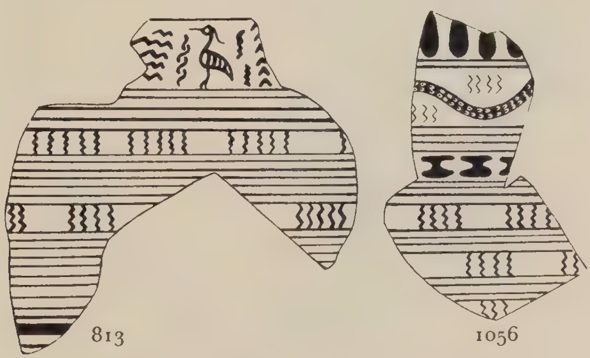

FIG. 20.—VASES. (SCALE 1 : 2.)

999. Shoulder, back and part of handle. H. 0·15 m. Queer ornament on side, like a helmet. Three short rays hanging down, between two long [454] ones. Perhaps white slip. Vertical strokes on the handle. VΘ 2·90 m.

Elaborate Vases.

1000. PLATE 60. Part of top half. H. 0·19 m. Red clay. Group of diamonds on lip; one side of rays outlined; palmette-tree in front; filling ornament, curled octopus; [455] rays at side hanging from the border; on one side, top of rosette, on the other, start of a circle, with rays coming from it; running dog on the handle. The neck is tall and no longer conical; plain stripes on it. Nucleus 12, 3·0 m.

1001. PLATE 60. Part of shoulder and body. H. 0·11 m. White slip. Solid rays, two rows of dicing. In front, palmette-tree between two great ovals; [456] curled and hatched rays from the border interlock with rays round an oval; pointed petals grow out of a hatched basket, stalks of four others pointing downwards; another oval begins on the left; beyond, a hanging ray ending in a curled spiral; the oval has added red, and is edged like a cuttle-fish; diced pillar in the centre; something angular with added red below the spiral. Nucleus 15 and elsewhere.

1002. PLATE 60. R. 503 (R. pl. 36). Photograph showing back of handle with a twist; long, hanging rays and ray with bud [457] under handle.

1003. PLATE 60, FIG. 14. R. 510 (R. pl. 37). On the third side is a palmette with a hatched box on each side. The oval had rays with curls outside it. Two other medallions, FIG. 14. Wall 28, 3·30–3·70.

1004. PLATE 60. R. 518 (R. p. 86, fig. 48) has also been put together. It has a real palmette (see Robertson's drawing), a short neck with 's's' and a swastika on the lip; vertical lines down the handle.

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[453] Robertson thought that his vase with linear style, R. 519, might not be early in the sequence, but its shape seems to derive rather well from our bulbous Geometric vase 972.

[454] For a ray almost the length of the vase, *cf.* the oinochoe of the Cumae Group, R. 138 (R. pl. 9), also 1002.

[455] *Cf.* the handle of 992.

[456] For the ovals, *cf.* the oinochoe R. 138 (R. fig. 21, p. 35), of the Cumae Group, no. 5 (see above n. 447). For the diced pillar, *cf.* the birds beside one on R. 526 (R. p. 87), which does not belong to this vase.

[457] *Cf.* R. 162 (R. pl. 9); for the handle-pattern contrast the clumsy drawing of the kantharos-handle 762 (PLATE 47).

1005. FIGS. 23 and 31. R. 521 (R. pl. 38). H. 0·23 m. (estimated). It appears to be a seascape. The whirligig [458] represents seaweed in a current; other weed hangs straight down. Three rays are rocks, between which two dogfish are about to swallow two eels. The base does not join, but has been set by the whorls.

Handles and Necks.

1006. Scrap of neck with a band of groups of two long zig-zags.[459]

1007. Short neck. H. 0·06 m. 'Running dog', on neck, 'W' on lip.

1008. Neck. H. 0·045 m. Double-axe on lip. Nucleus 15.

1009. Neck, with rays on shoulder. H. 0·085 m. 'M' on lip (mostly missing); ㄣ on neck.

1010. Neck and handle. H. 0·065 m. Zig-zag on lip and neck, vertical lines down the handle, horizontal at the top.

1011. Neck and top of handles. H. 0·095 m. Long rays on the handle, trellis on neck. Good quality.

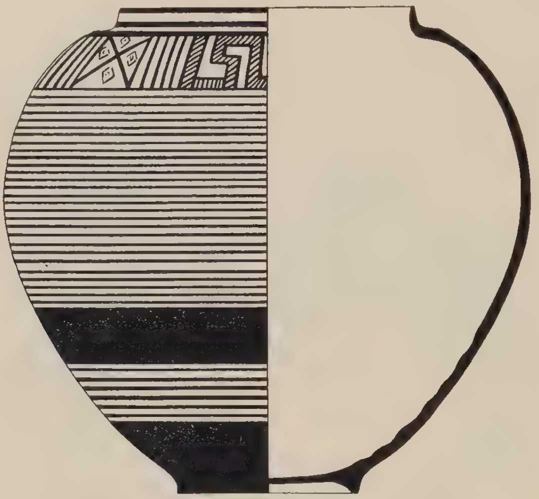

FIG. 21.—PYXIS 827. (SCALE 1 : 4.)

CONICAL OINOCHOAI

Johansen thought that the conical oinochoe originated in Argos, because handmade ones were found there; one was also found at Perachora.[460] Handmade vases continue to be made at all periods, and so far the Argive vases are undateable.[461] The earliest dateable conical oinochoe [462] is W. 76, and it is from a Middle Geometric group from the Corinth Agora. In view of the wide distribution of later Corinthian conical oinochoai it seems likely that the shape originated, as well as developed, in Corinth.

W. 76 has a flat rounded body. Almost this shape occurs in Ithaca (1012), but the decoration, lines all down the body and six cross-hatched triangles round the neck, shows that it must be dated about 700 B.C. There are only two vases of this shape; most others have steeper contours (1013). Little solid rays round the neck must mean a seventh-century date. Rays at the foot begin perhaps a little before 675 B.C. and continue. There are some finely painted vases about this period.

It would be strange if Ithacan conical oinochoai were confined to grand vases like R. 490–4. Some of the uncouth vases like R. 177 (R. pl. 11) may well have been made in Ithaca.

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[458] *Cf.* the whirligig on the oinochoe 956, FIG. 14.

[459] *Cf.* 919 (PLATE 57) and see on 919 above.

[460] *Perachora* I, pl. 14, 3 and p. 63.

[461] The vase illustrated *Tiryns* I, pl. XV 9, was found in a Late Geometric grave (26).

[462] The conical oinochoe figured by Johansen, *VS* 23, may not come from Athens and has nothing to do with Argos. There are others like W. 76 in the Corinth museum.

The reconstruction of the Protocorinthian conical oinochoe [463] 1018, FIG. 30, makes it easier to envisage the Ithacan 'Fine Group'. The bases R. 490–1 (R. pl. 34) are of the same shape and almost the same size as 1015. The neck 1020 (PLATE 58, R. 493, R. pl. 33) has acquired a hatched bird in a metope; so it cannot belong to the inscribed vase R. 490. Instead it becomes the neck of a pendant vase to R. 491, our 1018, FIG. 30, which also has metopes and a spotted fillet, and which could be reconstructed with some certainty (see below).

The necks [464] of conical oinochoai are generally less finely painted than the bodies, which should have prepared us for the continuance of coarse geometric painting in the seventh century.

The conical oinochoe with animal friezes and a horse's head on the bottom is a fine specimen (1023).

1012. Conical oinochoe. H. 0·083 m. Clay reddish. Lip and handle missing. This is the earliest shape, like W. 76, but the decoration is later; more cross-hatched triangles (six), and more lines.

1013. PLATE 58. Conical oinochoe. H. 0·085 m. Same clay; nice red paint. Same shape. Careless zig-zag on neck; frieze has horizontal zig-zags touching the lines.

1014. PLATE 57. Oinochoe. H. 0·13 m. Red clay and paint. Good fabric. High body, but rounded. Wide wavy line at the top of the neck, broad lines on it; curls and two reverse 's's' on shoulder; broad line below and at base; fine lines between. Probably Corinthian.

Similar oinochoe from Nucleus 12, 2·90 m.
Many others?

1014*a*. FIG. 31. Small vase.[465] D. 0·094 m. Detached dotted diamonds on neck; rather fat solid rays on shoulder, 's's' between; groups of neat wavy lines, broad line on foot. Rather fine painting. Corinthian.

1015. PLATE 56, FIG. 28. Restored oinochoe. (Estimated) H. 0·235 m. D. 0·174 m. Red clay; fine red paint. Base to shoulder certain; other sherds belong. A neck (R. 209, R. pl. 12) and part of a handle are the right size and clay, and are painted in the same style. Corinthian.

1016. FIG. 31. Shoulder. Poor condition. Dotted serpent [466] among dot-rosettes. Nucleus 15, 3·70 m.

1017. FIG. 31. Shoulder from a large vase. Red paint, much worn. Cross-hatched rays [467] and dicing.

1017*a*. FIG. 31. Neck,[468] incomplete, much damaged. Belonged to a vase like the preceding or possibly 992 (PLATE 62).

1018. FIG. 30. R. 491 (R. pl. 34). Part of body and base of oinochoe and part of neck. D. of base 0·24 m. The shape is that of 1015, the neck like R. 493, our 1020. Below the metopes are two friezes of wavy lines. The sherds overlap. A new sherd shows that the horse on the base is prancing like the lion.

1019. Sherds from an oinochoe with a painted inscription, R. 490 (R. pl. 34). D. 0·18 m. For section, *cf.* 1021. The lower part is certain, and the shape is also like the foregoing. The large size makes it unlikely that it is to be dated much before 675 B.C., and its style does not look much later. For the neck, see 1020. The 'self-portrait' on the base of this vase occupies only 0·04 m. of a diameter of 0·18 m., so the complete picture might be of someone carrying or holding the dedication.

1020. PLATE 48. Neck. R. 493 (R. pl. 33). A bird in a metope from VZ 3·40 m. fits the shoulder, so this neck cannot belong to the oinochoe with a painted inscription (R. 490, see 1019). Shape like 1015 with a bigger neck: a pair with 1018 (FIG. 31), R. 491.

1021. FIG. 8. Base. D. 0·144 m. Found in Nucleus 15. This is the base of R. 495, which could now be restored: shape of 1015. Three friezes of wavy lines below red mullet. They have just the eager look of those on the hydria 868 which Robertson has already connected with this group.

Late Protocorinthian Conical Oinochoai

1022. Neck and part of body.[469] H. 0·095. Sealing-wax red. Rays at foot like the following. No join.

1023. PLATE 61. Body of an oinochoe.[470] H. 0·11 m. Neck missing, handle may not belong. D. 0·248 m. H. of handle 0·21 m. Red clay. Black and red tongues on the shoulder. Two animal friezes with dicing in between; rays at the foot; three lines between registers. The centre-piece in the lower frieze is an eagle flying right, between two crouch-

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[463] It seems likely that Kraiker, *Aigina*, pl. 16, 290, and certainly pl. 36, 481, 482, belong to the first quarter of the seventh century. Payne's remark, *NC* 13, n. 7, refers to necks, not to whole vases. Kraiker 482 should go with 178, *ibid.* pl. 8, which is classified too early.

[464] See the thick lines on the neck of *Perachora* I, pl. 24, 4; they are much thicker than those on the body; *cf.* our 1015.

[465] This vase is linked with the large oinochoai by the 's's' within the rays; and with cups by detached dotted diamonds.

[466] Cf. *VS*, pl. VIII 6.

[467] *Cf.* Kraiker, *Aigina* 218, pl. 15, also *VS*, pl. VIII 6. The line on the right is the break, not the shape of the vase.

[468] *Cf.* the neck *VS*, pl. VIII 6.

[469] *Cf.* W. 200; also fabric of 808, 967.

[470] See *JHS* LVIII, pl. XIX.

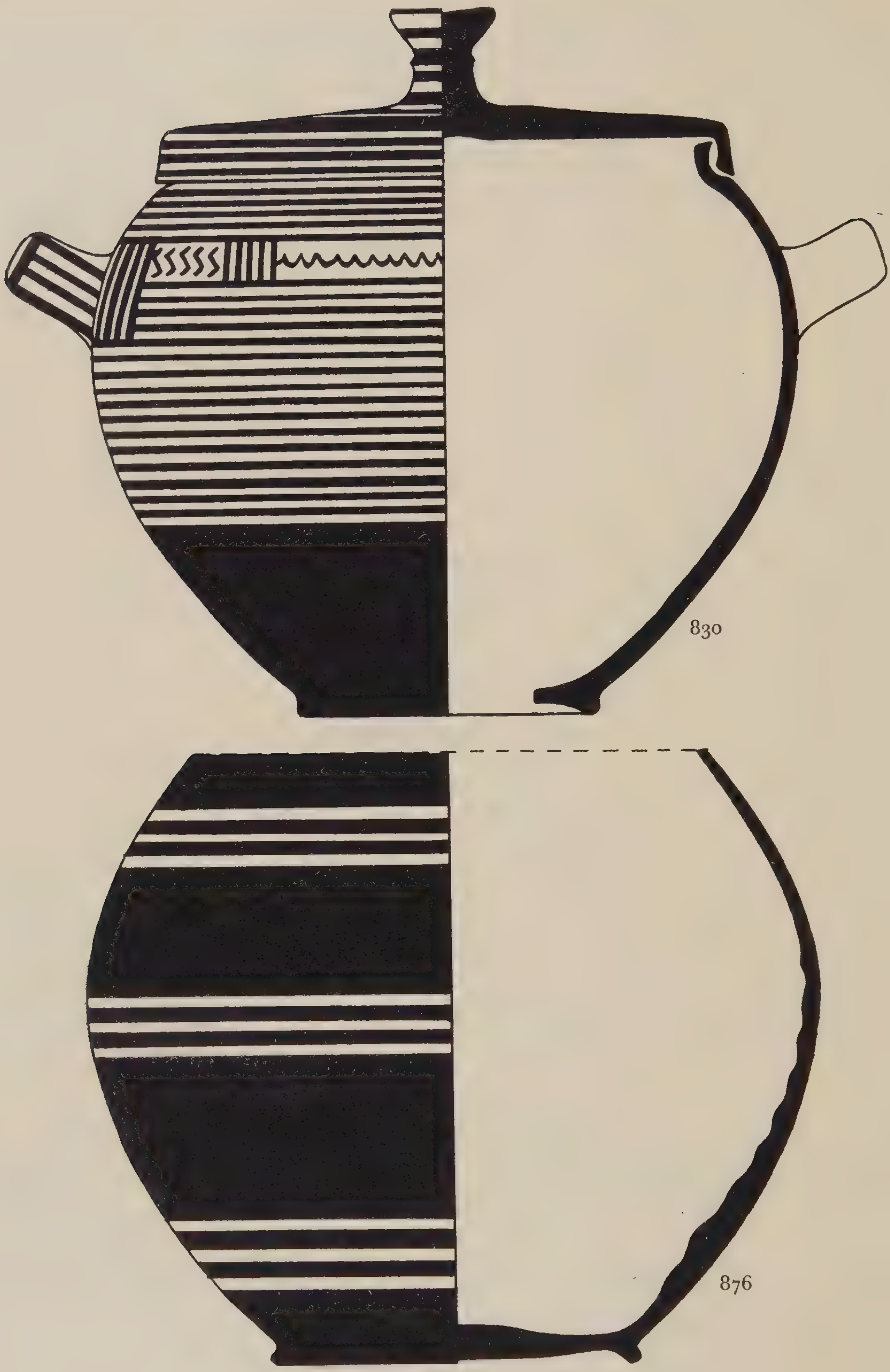

Fig. 22.—Pyxis and Local Oinochoe. (Scale 1 : 2.)

ing sphinxes; another eagle, behind it, above the owl. At the back of each frieze is a frontal panther. The procession of animals walks from each side towards the sphinxes.

Upper frieze: to the left: boar, lion, boar, lion.
to the right: boar, lion, boar.
Lower frieze: a and b: lion, bull. Owl between them on one side looking sideways, an eagle above. There may be a stag.[471]

The dot rosettes are under, above, between, with a few extra ones. A swastika instead of a rosette is common below the animals (see PLATE 61). On the bottom, a fine horse's head, more like a wall painting than a vase painting.

Handle incomplete. Rosettes between the coils of a snake; curls at the top, two lines between. These rosettes have well-defined stalks, and are like those on the vase.

The animals are rather tall and very much 'head in air'. There is the same fine detail noted by Robertson in his kotyle,[472] but more purpose in our bull. The sphinxes have unusually sweet faces.[473] The painter should be recognisable by his swastikas.[474] A link with the Chigi vase is provided by the mane of the lion.[475] The Chigi vase, too, has careful rosettes, sweet faces, and the horses' heads are not unlike; their harness is identical. For other pictures below vases, see R. 171, 490–2. Late Protocorinthian. Work of the Sacrifice Painter.[476]

The largest part of this vase was smashed on a stone beside Wall 27.

BROAD-BOTTOMED OINOCHOAI

Late Geometric

Robertson (R. p. 40) gives the history of the shape. The illustration of R. 157, our 1024 (PLATE 19), completes the picture and links it with a typologically earlier vase W. 130, which seems to be still in Middle Geometric technique.

Robertson called attention to the similarity of the painting of R. 45 (R. p. 20, fig. 11), there called a kantharos, to his broad-bottomed oinochoai. Part of a fourth ray has been added, and the vase is now too wide below to be anything but a broad-bottomed oinochoe. The length of the rays would date it just a little earlier than W. 141, probably still in the first quarter of the seventh century. The coils on the neck are incised.

Sherd from another similar red-painted vase, Wall 26, 3·50 m.:

1024. PLATE 58. R. 157. Top part of an oinochoe, base missing. Corinthian clay, black paint, dark below. The style of frieze at shoulder level dates it to the third quarter of the eighth century.[477] The black line is merely a crack.

ANGULAR OINOCHOAI AND BOTTLES

Robertson connected the bottle-shaped vases R. 471–2 (R. pl. 33) rather loosely with Crete. The connection is closest with the more elaborate vase R. 472.[478] The simpler and earlier-looking R. 471 has an undeniable Ithacan trait, strokes on a reserved space at the top,[479] a trait that is to be seen on the even simpler 1025, below. All three vases have triple, spotted handles like R. 472. In any case the bottle-shape was established in Ithaca, probably in the eighth century. R. 484 (R. pl. 33) has now part of a heavy barred handle. The vase had steep narrow sides; perhaps it had height like R. 471, to carry off that large elaborate neck, and was bottle-shaped. Though Crete was fond of the shape, this kind of angular shape has been found in both Athens [480] and Kephallenia [481] in Protogeometric times.

1025. Part of an oinochoe. Base and handle-spring do not join. Present H. 0·23 m. Red clay; dark matt paint. It is in the series of R. 471 and 472. Chain of crosses on a reserved space at the top of the neck; four groups of three reserved lines, badly drawn, on the body. Angle of the brown shoulder is sharp. Spring of a triple handle.

There is also a neck with decoration like R. 471, with redder paint but of similar fabric.

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[471] For the stag and the high-flying eagle, *cf.* Kraiker, *Aigina*, pl. 26, 339.

[472] *Cf.* R. 33 (R. pl. 14). *Cf.* also Kraiker, *Aigina* no. 339.

[473] Cf. *NC* pl. 10, 3, a siren, no. 47.

[474] *Cf.* Kraiker, *Aigina*, pl. 28, 349, but there are fewer rosettes.

[475] See *JHS* LVIII, pl. XIX. T. J. Dunbabin quotes *MusHelv* VII (1950), 39.

[476] See also Buschor *Griechische Vasen* 30.

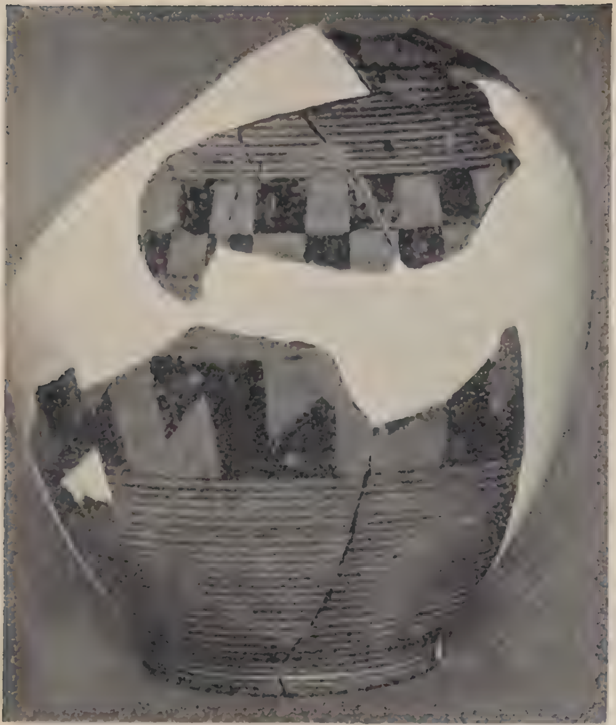
[477] *Cf.* the Little Jug W. 106, the kotyle W. 110.

[478] See *BSA* XXIX pl. 9. For a double handle on a bottle, cf. *Ann.* X–XII 435, TR 226.

[479] See p. 306 on R. 432.

[480] *Kerameikos* I, pl. 27, Inst. 507.

[481] *AE* 1933, 87, no. 89.



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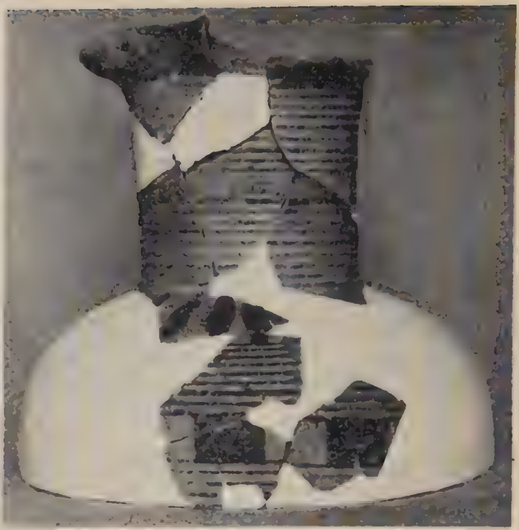

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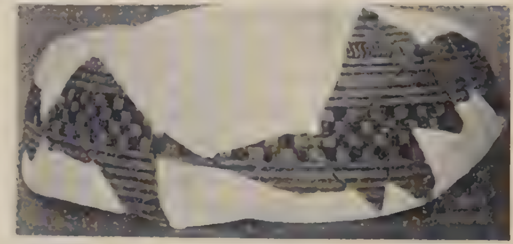

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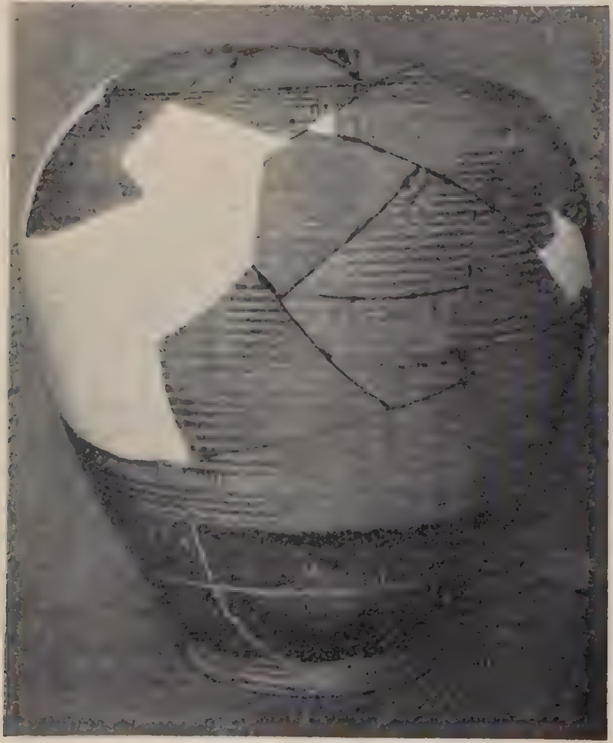

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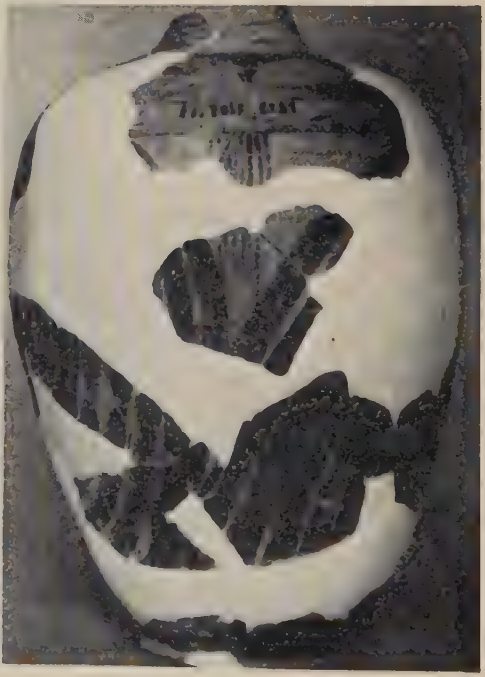

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FIG. 23.—OINOCHOAI.

1026. PLATE 56. Angular oinochoe [482] with a plastic [483] female figure. H. 0·30 m. D. of base 0·135 m. The bulk of this vase was found in the former excavations, but as the neck turned up in Nucleus 12, Robertson generously left it for me to publish.

It is overfired, the paint being navy blue on a grass green ground, with burst bubbles on it. It is the last word in elaborate but very neat painting. There are eight decorative friezes. The lowest and the second from the top are miniature. The *horror vacui* is strong: groups of chevrons on the second frieze are joined by tangents. The horizontal zig-zags in the same position in the sixth and eighth friezes have dots above and below. The serpent round the shoulder is hatched and has dots on both sides. The lady has on either side of her a cross inside a Maltese cross [484] with swastikas in its arms. She wears an embroidered garment which may be a peplos, but it has long embroidered sleeves. Plait on one arm, above swastikas; lines on the other; dicing across the bodice, belt round the middle, dots down the border on each side. Head, hands, and one foot missing.

The shape of the vase seems to point to Crete, and Crete also likes plastic figures on vases, but the painting is Corinthian of the first quarter of the seventh century.[485] This is the earliest plastic figurine on a Corinthian vase.[486] The painter of this vase is in close touch with Corinth, but his potter was less skilled.

The lady differs from early Perachora figurines in showing her feet. Check dresses were popular for a long time at Perachora. Contrast her with *Perachora* I, no. 4, pl. 87, there, surely, dated fifty years too early.

ROUND MOUTHED VASES

Small Jugs.

The origin of the type goes back to the Bronze Age,[487] and H. 71,[488] on a high foot, is in the line of succession. The shape was popular in Kephallenia[489] among late vases of Mycenaean style, and a vase [490] from Punta del Tonno, Taranto, is more like them [491] than like any Protocorinthian pottery. The earliest Corinthian example in Aetos [492] shows similar vague curves. These curves are kept with Corinthian Late Geometric decoration. Then as the lines grow more frequent, the vase grows taller. When decoration other than lines dies out, the lip is offset and the vases cease to look Corinthian, the more developed have an Eastern look. It would be easy to derive the East Greek vases like R. 589 (R. pl. 44) from them, but the earliest jugs in Ithaca cannot be derived from those, they must be a century or more earlier. I suppose these jugs were used as dippers.

R. 356 (R. pl. 22) is similar to 1029, and should be classed here. It is Corinthian: *cf.* W. 106. R. 425 (R. pl. 30) with an off-set rim, which is narrower and has plain lines, is later in the series, probably Corinthian. R. 218 (R. pl. 11) should be restored with a similar handle. R. 426 (R. pl. 29) may belong to the family of sixth-century plain glaze [493] vases.

There are many Little Jugs, some from VN and from Pithos 1.

1027. PLATE 58. Glazed jug. H. 0·13 m. D. 0·09 m., 0·055 m. Pale clay, a little black paint. Two lines inside the rim; [494] barred handle; red potter's mark below. Probably Corinthian. Uncertain date. VN 2·80 m.

1028. Jug. H. 0·145 m. D. 0·088 m., 0·054 m. Pale yellow clay; broad reserved lines,[495] three narrow ones below handle, a broad one above base; snake on handle; broad dark line inside. Like local Early Geometric. VN Pithos 1.

1029. PLATE 58. Jug. H. 0·110 m. D. 0·07 m., 0·052 m. Characteristically Corinthian clay, and nice red paint. Line of paint inside the rim. Red potter's mark below. Third quarter of the eighth century, *cf.* the decoration of the earliest kotylai.[496] VZ 3·55 m.

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[482] Perhaps Kraiker, *Aigina*, pl. 8, 118 might belong to a bottle.

[483] Robertson reminds me of the plastic rider on R. 557 (R. pl. 41). He seems to me to be later, about the middle of the seventh century, and always recalls to me the Syracuse rider *MA* XXV, pl. XVII.

[484] *Cf.* Cumae, pl. XLV 3; also the kotyle 691 (PLATE 42).

[485] *Cf.* conical oinochoe 1015 (PLATE 56).

[486] *Cf.* those found in the Kerameikos, Kübler, *Altattische Malerei*, 61. There are plenty of serpents on Corinthian and Ithacan vases, but not in Crete. For dots in zig-zags, *cf.* W. 102. For wavy lines joined by tangents, *cf.* the large Corinthian Late Geometric aryballos no. 1050 (PLATE 57). Wavy lines are hardly found at all in Crete.

[487] Stubbings, *BSA* XLII, pl. XV 6 and 8, from Attica.

[488] *BSA* XXXIII 47.

[489] *AE* 1932, pl. 11, 169; pls. 12 and 13.

[490] Δρᾶγμα 461, fig. 2.

[491] Especially the first mentioned. It will not, of course, prove Pareti's pleasant theory of the foundation of Tarentum in 800 B.C. by users of belated Mycenaean pottery (*La Tomba Regulini-Galassi* 25, 486). The Mycenaean sherds from Punta del Tonno are early thirteenth century (see Furumark, quoted in Δρᾶγμα 468 ff.). There are many more. As for the hand-made allegedly Protogeometricising pottery found in the Borgo Nuovo, it has no identifiable Aegean connections: see Mayer, *Apulien*, pls. 3 and 4, but Lord William Taylour showed me a photograph of one Ithacan Protogeometric sherd.

[492] *E.g.* 1027, *cf.* W. 106.

[493] See p. 226.

[494] The rest of the inside is unpainted. *Cf.* W. 106.

[495] The body is like *AE* 1932, pl. 169, except that light-on-dark has become dark-on-light.

[496] *Cf.* also W. 106 and *Perachora* I, pl. 2, 4.

Other Shapes

Early Local Geometric

R. 414, 415 (R. pl. 27). Fine brittle ware which Robertson believed to be local. The shape has parallels [497] in bronze, and *cf.* Little Jugs. The neck 877 (FIG. 19), classed as an oinochoe, has the same decoration, and the lip may be round. There is also the top of a brown glaze body, of the same fabric and possibly of this type:

1030. Neck. H. 0·087 m. D. 0·103 m. Pink clay, thick fabric; streaky black paint. There is room for a handle only at one point on the rim. Same sort of consistency as the oinochoe 879. The shoulder spreads out; it may be a hydria.

Late Geometric

1031. FIG. 15. Jug. H. 0·17 m. Base missing. Lip [498] flaring, missing except at the handle. Greenish clay, black paint. Broad conical neck. Two lines inside rim; continuous zig-zag between uprights on the neck; dark at handle and base, lines half-way down. Probably Corinthian. Pithos 2.

Perhaps Hydriai

1032. FIG. 13. Neck. H. 0·083 m. Pink clay; nice brown paint. Undecorated. No mark of handle, but plenty of room. There are several bodies with three reserved lines below the handles, which may belong to similar necks.

1033. PLATE 55. Bit of rim. D. 0·11 m. Pale clay. Meander hooks,[499] line inside, groups of dots on the rim. Same style of painting as the cup 650 (FIG. 7). Corinthian. Wall 25.

1034. FIG. 13. Rim. D. 0·14 m. Same clay. The section is slightly thicker than R. 414 (R. pl. 27, fig. 44). Lines inside, groups of dots on the rim. Well-drawn running spiral.[500] Corinthian. VZ 3·20 m.

1035. Split handle on a round rim. H. 0·11 m.

TORCH-HOLDERS OR RHYTONS

I do not like the term ‘ candlesticks ’. There is no evidence for the use of candles before Roman times, whereas torches were universal and sometimes elaborate.[501] Moreover candlesticks are solid, not hollow; otherwise the wax or tallow might run away and misbehave. Torch-holders, however, are not common in shrines, but here they are elaborate and may be ritual. They would be suitable for chthonic rites, whether they be torches or rhytons.[502] Miss Jeffery called my attention to one at Delos.[503]

Robertson thought they were not rhytons because they are at a shrine and not in graves, but infernal deities received bloodless sacrifices, and if this is a shrine of Odysseus, both torches and rhytons would be in order, and Herakles (1036, an idea I have from Mr. Dunbabin) a suitable guest.

R. 532 (R. pl. 38) has lines inside the foot, so it must sometimes have been inverted.

1036. FIG. 26. Torch-holder, R. 531.[504] Herakles wearing helmet and corselet, cozening the deer. The linear painting is much in the style of the conical oinochoe 1015 (PLATE 56), and the deer has much more in common with another from Cumae [505] than with the awful animals on the stand R. 537 (R. pl. 41). Early seventh century. The deer on the deer oinochoe R. 467 (R. pl. 31) will then date comfortably to the second Bf. style, along with Kalikleas' vase. The latter has little style [506] and might be considered undateable, but one would not expect such an absurd shape to last for ever.

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[497] See p. 341 below and *cf.* 1034.

[498] It may be trefoil-shaped, but it is rather like that of the large aryballos 1050 (PLATE 57). Different shape of body and neck.

[499] See under 650 for other references. Shape of neck not unlike R. 414 (R. fig. 44).

[500] See 646 (PLATE 41) and 645 for other references.

[501] *Od.* VII 100. Two inscriptions at Epidauros mention a fire-bearer to Herakles, *AE* 1894, 50, nos. 10, 11.

[502] Cf. *Od.* XI 25 ff. The Cimmerians' land was always in darkness.

[503] *Délos* XVII pl. X 4 and 7; found in the Artemision. Dugas' suggestion of a portable stove is no better than his predecessor's ‘ vase support ’. See 1037 below, and p. 259 above. On rhytons of other shapes, see R. Eilmann, *AM* LVIII 127.

[504] *Cf.* R. pl. 38. FIG. 26 is Miss Petty's drawing. The vase may be from Corinth.

[505] *Op. cit.*, pl. 39, 1 or the aryballos in Boston, *PV* pl. 5, 3.

[506] One cannot date a derivative vase strictly with its source, but the nut-cracker chins and noses of the sphinxes are derived from profiles like those on the lion-fight and centaur aryballoi *PV* pls. 10, 11, and not from the sweeter faces that come after. The preliminary reports of this vase are listed by McDermott, *The Ape in Antiquity*, and all the previous errors and some new ones appear in his text. I re-affirm (1) the style is not Protocorinthian; (2) the alphabet is not Corinthian but Achaean (R. pls. 38, 39, p. 89). D. von Bothmer suggested the helmet.

1037. FIG. 12. Part of lower end of a torch-holder. D. 0·08 m. Red clay, thick fabric, dark paint. Shape like an Ithacan conical oinochoe without a base. Reserved lines at foot and one above. Inside unpainted, except for a dark line. Close to the Delos vases quoted above.

1038. FIG. 12. Part of bowl or base of a torch-holder. D. 0·091 m. Buff, worn clay, traces of brown paint. VN 2·05 m., also W4, 1·70 m.

1039. PLATE 58. Part of middle of a cylindrical vessel, expanding below. Thickness 0·012 m. Buff clay; fine yellow-brown paint. Good surface. Technique and style is like that of the big kotyle 690 (PLATE 43). Two sets of loops. Most of it from Nucleus 16, 3·60 m., but one piece from Heurtley's Lower Deposit. Clearly orientalising ware of the seventh century.

STANDS [507]

1040. Part of a stand R. 537 (R. pl. 41). D. 0·26 m. Part of the body of a stag, like the second animal shown by Robertson; a doe is behind. Probably there were six animals and two birds. It is shocking work, but need not therefore be early. Indeed, the chaotic zig-zags are reminiscent of the Analatos hydria, though one has to go to Boeotia to find such monstrosities. I suggest that R. 537–8 are under Attic influence, and belong to the first quarter of the seventh century.

Fragment of R. 539 (R. pl. 41), another horse protome, from Nucleus 12, which may be Corinthian.

RING VASES

What were ring vases used for? Surely not for wine, water, or milk: it would be impossible ever to clean them. Some of them are too large for perfume, or to sprinkle oil for soap on the hand. Were they another kind of oil vase, a lamp with a wick? That would account for the difference in size, and for the two mouths on four vases in Ithaca.[508] Some ring vases look very like cothons, which were no doubt easier to make and work. There are cothons in Ithaca. Both shapes were displaced by the classical lamp, a little oil cruisie.

Robertson quotes a Kephallenian sub-Mycenaean ring vase, and Wace found them at Mycenae.

R. 540 (R. pl. 40), is painted above and below, which suggests that it was viewed from above and below, and swung on a handle. See 1041.

The close correspondence between the shape and decoration of the body of R. 547 and *Cumae*, pl. XXXIX 2, should be mentioned. It is additional evidence for dating the vase at the end of the Late Geometric period or later.

1041. Handle. Length 0·155 m. Red clay and paint. Two lines of dots between three lines. A mouth at each end of it, so a suitable handle for a vase like R. 540. W3, 1·60 m.

1042. PLATE 58. Part of a large ring vase. Diamonds on the inside, inscribed triangles on the top. It probably belongs to R. 543, which has the top of a triangle. VS 3·15 m.

1043. FIG. 34. Ring vase R. 545 (R. pl. 40). H. 0·20 m. Like R. 541 it has three, perhaps four, divided animal feet. The neck is now on the side of the vase, so there must have been a handle to balance it. V4, 3·00 m.

1044. Part of body. Usual clay, white surface. Dotted snakes.

1045. FIG. 14. Handle and neck. H. 0·110 m. The handle grows out of the neck, which is mis-shapen. Snakes[509] or fishes on the handle. The neck is covered with double-axes and swastikas; double-axes on the lip.

1046. Neck set sideways. H. 0·06 m. Strokes on lip, hatched triangles, squiggles,[510] diamonds.

ARYBALLOI

The aryballos is not a favourite shape at Aetos, but the shape did exist, and there is no need to look for early local makeshifts.[511] They had a perfectly good one, which looks Protogeometric (P. 143), found with other Protogeometric sherds.

Though 1047 looks as early as W. 48,[512] Mr. Rodney Young pointed out to me that such

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[507] On R. 225 see 807 above.

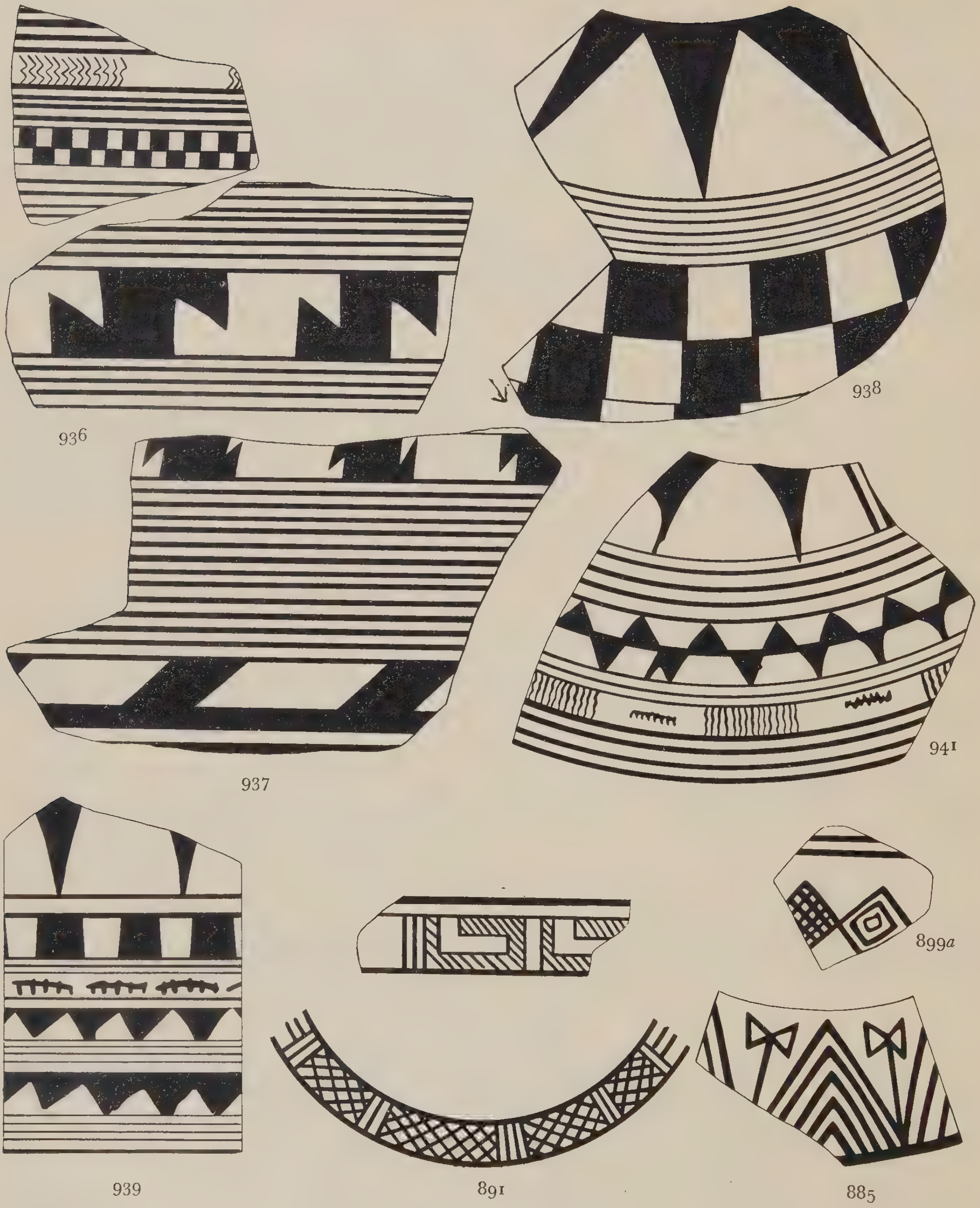
[508] See R. pl. 40.

[509] *Cf.* little snakes on a handle, Cumae pl. XXXIX 1. For double axes as a filling ornament *cf.* Kraiker, *Aigina* 481, pl. 36. For swastikas as a filling ornament, *cf.* Cumae pl. XXXVII.

[510] *Cf.* neck of a lekythos in a grave (no. 32) at Cumae, *ibid.* pl. XL 7.

[511] It has been suggested that 871, PLATE 44, was a local effort to make an aryballos.

[512] W. 48 is described as having a flat lip, so I should call it an aryballos.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938
937
941
939
891
899a
885

Fig. 24.—'Jazz' and Geometric Patterns. (Scale 1 : 2.)

vases lasted on till the end of the eighth century in Athens, and probably in Corinth too. Only one fine globular aryballos has been published from Corinth, none from Crete.

It is indeed not safe to conclude that all coarse globular aryballoi in Crete must belong to the eighth century. In fact there are indications that there was quite a considerable time lag in Crete, and it is only by ignoring these that Levi has maintained his exalted dating for Arkades. As it is now certain that Cretan Protogeometric was still being made when Athens and Corinth were making Early Geometric, Payne's citation of a Cretan aryballos [513] in Protogeometric style no longer fixes the Cretan origin of the shape; it may not be Protogeometric.

1053 seems to be the link between plain cross-hatched triangles round the neck and protomes of birds at Cumae.[514] These latter cannot be unconnected with griffin-protomes on bronze cauldrons, and may be taken to date the arrival of the griffins in Greece. By our scheme neither this vase nor the two aryballoi at Cumae can possibly belong to the seventh century. On the other hand, Robertson's griffin oinochoe has pretty long rays at the foot (R. 142, R. pl. 9), which should bring it down to 675 B.C.[515] The griffins are like that of the plastic Griffin Jug from Aigina.[516] The latter may be Corinthian.

I add a list of patterns on some of Robertson's aryballoi which I do not illustrate.

R. 226. Inscribed zig-zags on shoulder, like W. 102.

R. 230. Three foolscaps; line on handle.

R. 231. Four cross-hatched triangles on the shoulder, points up. Four long solid rays on the handle.

It seems likely that there are few [517] solid rays round the neck of globular aryballoi, and that most are cross-hatched like those found in Ithaca.

I must perforce omit some interesting Middle Protocorinthian aryballoi. Anderson deals with the later aryballoi (p. 361 below).

1049 (R. 548) is Corinthian, its technique is close to the tall-necked oinochoe 971 (PLATE 62), and it is following the regular development of Corinthian Geometric pottery. The next step is taken by the large vase 1050, which is just the shape of R. 229 (R. pl. 12); it is also certainly Corinthian. There is a duplicate from Tiryns in the Nauplia Museum, and Dr. Kunze tells me there is also an Argive imitation.

Globular Early to Late Geometric Aryballoi

1047. PLATE 59. Aryballos. H. 0·10 m. D. 0·03 m., 0·042 m. Reddish Corinthian clay; good dark red paint. Three reserved lines below the handle. It looks as early as W. 48, but may be later. VN 2·50 m.

1048. Aryballos. H. 0·085 m. Red clay, plain glaze. Longer neck than the last. Undateable.

Late Geometric Aryballoi

1049. PLATE 62. R. 548. Aryballos. H. 0·09 m. D. 0·036 m. Red clay; fine brown paint. Conical neck. Technique like 971 (PLATE 23). Broad stripes, four wild-looking zig-zags on shoulder; serpent on handle, which is also barred; the serpent looks like a centipede.[518]

1050. PLATE 57. Large aryballos. H. 0·23 m. Green clay, poor black paint. Shape, clumsy. Below shoulder, groups of wavy lines joined by tangents. Otherwise, broad lines. Dark below, with one reserved line. Follows not too badly on the Early Geometric aryballos, and it may be the contemporary of the fine aryballos R. 229, which is just this shape. Corinthian. VZ 3·10 m.

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[513] Oxford AE 278, *NC* 6.

[514] Cumae, pl. XLIII 3 and 5.

[515] See Caskey and Amandry, *Hesperia* XXI; pl. 50, 144 is surely a globular aryballos.

[516] Payne *JHS* XLVI, pl. 8. See also Lane *Greek Pottery*, pl. 15. On dinoi in Ithaca see pp. 265, 296, 297.

[517] *VS* pl. 14, 8.

[518] *Cf.* Cumae, pl. XL 2, grave 32. Blakeway claimed this aryballos for Crete; it is certainly of Corinthian style. Grave 32 is late, because it contains a jazz conical oinochoe with pointed solid rays round the neck. For the handle, *cf.* also Kraiker, *Aigina* no. 51, pl. 3. This sherd is said to be Attic, but all the patterns are Corinthian. Can the shape be a life-size plastic tripod-lebes, the ring-handle being broken off, leaving the handle-strap?

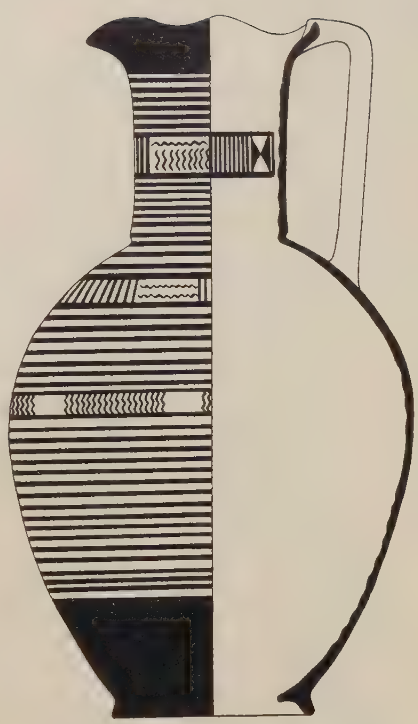
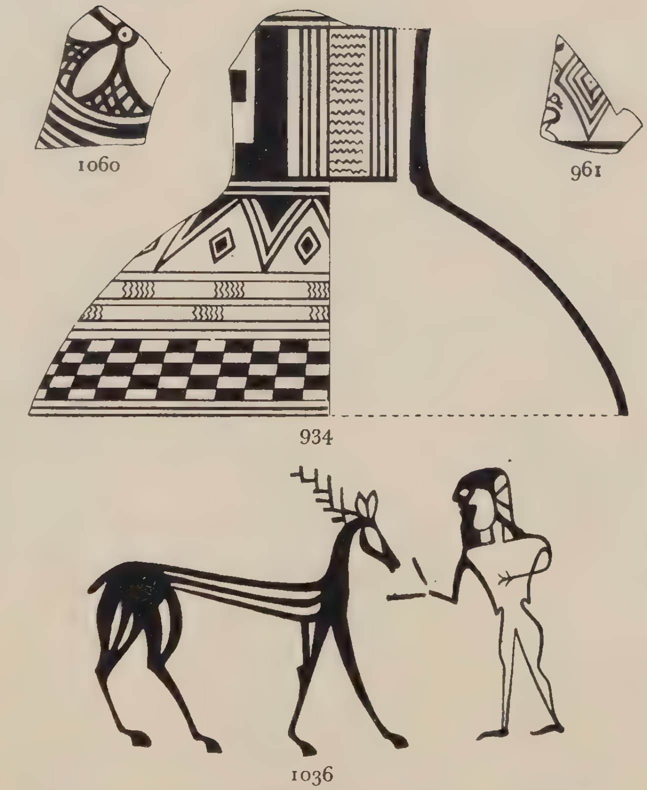


Fig. 25.—Geometric Oinochoe 923. (Scale 1 : 4.)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1036

Fig, 26.—Orientalising Patterns. (Scale 934 (1 : 4); rest (1 : 2).)

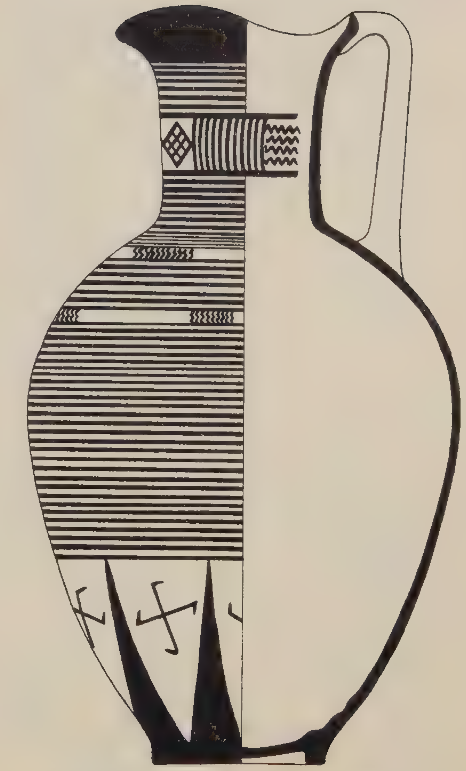

Fig. 27.—Oinochoai 927 and 948. (Scale 1 : 4.)

Orientalising Aryballoi

1051. Aryballos. H. 0·07 m. D. 0·023 m., 0·026 m. Four cross-hatched rays on neck; dark below, with a reserved line; finer lines towards the top; line up the handle. VN 3·10 m.
Shape rounder than R. 229.

1052. Part of an aryballos, neck missing. D. 0·022 m. Two reserved lines on dark below. Very fine lines, leaves. W4, 1·70 m. (also VN and VM).

1053. FIG. 19. R. 229 (R. pl. 12). Four cross-hatched triangles, with birds' heads holding fishes over a rock. A line up the handle.

Ovoid Aryballoi.

1054. Aryballos. H. 0·067 m. D. 0·03 m., 0·012 m. Twisted rays on the lip, which slopes down from the mouth. Serpent on handle; dot rosettes on shoulder; dicing on middle; six rays below. VN 3·10 m.

1055. Another. Almost exactly similar but slightly more pointed. Seven rays below. From Heurtley's 'Piriform deposit'. See also p. 361 below.

POMEGRANATES

1056. FIG. 30. Part of body. Buff clay. Leaves, incised snake with ornaments on the coils. Double-axes; three friezes of groups of four wavy lines, four fine lines between each. Fine painting

1057. Similar. A little thicker. Dark above; groups of two bars and dicing. Nucleus 15, 3·70 m.

PLATES AND DISHES

The rims of plates and the companion shape, dishes, proceed from upright to flat. The decoration changes from the Geometric tradition, bounded by lines, to designs in a free field; the fabric tends to grow thicker. These tendencies may not be invariable, but the rules seem to fit the known facts. 'Corinthian' plates are flat, and examples from Perachora,[519] which should be early by design and stratification, are steep. Only 1058, the steepest of our plates, may be eighth century. Robertson's 'fine' plates, with hatched stars, are orientalising, from the design of R. 561 (R. pl. 42): they link up with our 1061, which takes with it 1062; but these latter will be later, because of their solid [520] centres. Still more solid painting and flatter sections put 1065 (R. 265, R. pl. 15) and our 1063 later still. Here there is something like a black-and-white style, and *cf.* 1065 with later very red vases in other shapes.[521] It would not be reasonable if one of the latest vases from Corinth should be the only import. Most of these plates are probably Corinthian.

The sections of the Lion plates 1067 and R. 563 (R. pl. 42) are not in the regular Corinthian sequence, but there is a parallel from Perachora.[521a] They are evidently companion plates, but the style of the two lions is strongly contrasting, the one with an incised mane, the other without inner markings. They cannot be earlier than the second Bf. style.

R. 564 (R. fig. 50) appears to be a stray of *sigillata* type which may have crept in from the surface.

Late Geometric Plate

1058. PLATE 62, FIG. 12. Part of rim and part of body of a plate with a section like R. 562 (R. p. 93). Red clay, white slip. H. 0·035 m. D. 0·22 m., 0·9 m. It has the earliest design on a plate, groups of six large wavy lines in a style like those on an orientalising oinochoe (930); outside, on the rim, these groups are joined by horizontal [522] wavy lines. Underside plain. VZ 2·90 m.

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[519] *Perachora* I, pls. B and 123, 15.
[520] Kraiker's designs are solid enough, but they look early. Unfortunately no sections are given, *Aigina* pl. 16, 247.
[521] Dinos 808. Late Protocorinthian, oinochoe 966, conical oinochoe 1022.
[521a] *Perachora* I, pl. 123, 16. It is surprising that this shape is as early at Perachora.
[522] *Cf.* 829, FIG. 9.

Orientalising Plates

1059. FIG. 13. Part of a dish. H. 0·04 m. D. 0·24 m., 0·175 m. Clay pink, white slip. Wavy lines half the size of those on R. 265, between lines. The outside has a still smaller frieze. Mark of a handle. Centre has eight concentric lines, band of solid rays with one horizontal wavy line between. Underside similar, but without the wavy lines between the rays. Not Corinthian. Nucleus 12, 2·90–3·10 m.

1060. FIG. 26. Centre of plate. Same fabric as R. 559 (R. pl. 42). Cross-hatched wheel.[523] VΘ 2·90–3 m.

1061. PLATE 62, FIG. 12. Part of a plate. H. 0·034 m. D. 0·022 m., 0·17 m. Red clay. Deeper but slightly flatter section than R. 559. It, too, has dots on rim and base. Simple large lines and an orientalising rosette in the centre. V5, 2·10 m. Resembles Ithacan red technique.

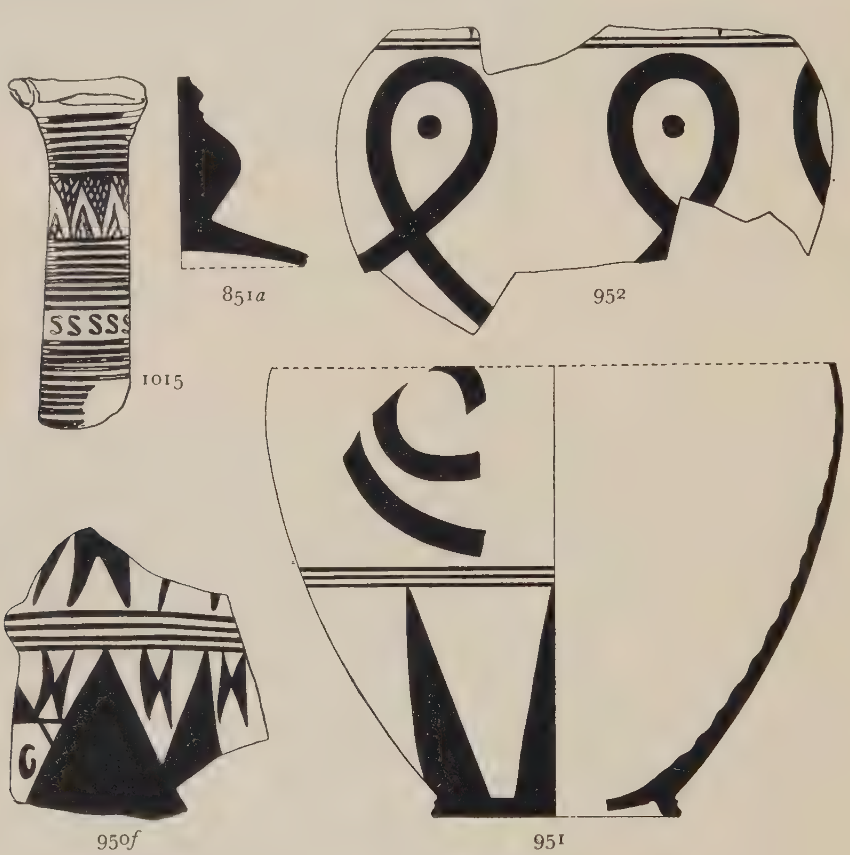

FIG. 28.—OINOCHOAI AND A LID. (SCALE 3 : 8.)

1062. PLATE 62, FIG. 12. Part of a plate. H. 0·024 m. D. 0·22 m., 0·17 m. Lighter clay, yellow paint. More elaborate than the last and shallower. Three wavy lines round the rim, friezes of hatched triangles, leaves and a pointed rosette; dots as on no. 1061. Underside, zig-zags on rim, frieze of 'S's and a pointed rosette. VΘ 2·95 m. Clearly we are now well in the seventh century.[524]

1063. FIGS. 12 and 34. Rim and part of a plate. H. 0·015 m. D. 0·32 m., 0·26 m. White clay, black paint. Two bevels on the rim. Zig-zag lines on both sides, rays, coming to the edge, below. This shape has advanced far towards the flat 'Corinthian' shape. *Cf.* R. 265 (R. pl. 15 and fig. 19). Nucleus 12, 2·90–3·00 m.

1064. FIG. 34. Centre of a plate, perhaps the last.

1064*a*. FIG. 34. Another.

1065. FIG. 33. R. 265 (R. pl. 15) can be reconstructed with some probability. The outer tier, on the outside of the plate, seems to have red leaves.[525] There will be room for another leaf between those on the plate. The points of five red petals appear in the centre: add three more making them like 1061, and we have a rosette inside rays. This is not a Geometric design.

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[523] *Cf.* the wheel on *Perachora* I, pl. 14, 7. On the other side swastikas.
[524] This plate has much in common with Kraiker *Aigina* pl. 16, 247; *cf.* the bars on 844*a* (PLATE 51).
[525] For the rays, *cf.* an ivory spectacle fibula at Syracuse *MA* XXV 499.

1066. FIG. 34. Sherd from the flat part of a plate. Same clay and paint. Thin rays on both sides, degenerate bobbles in a border. Good surface.

1067. FIGS. 12, 32. Another lion plate.[526] H. 0·031 m. D. 0·21 m., 0·16 m. A companion piece to R. 563 (R. pl. 42), with the same border, but the underside is now plain. Border in good brown paint; plain lines outside. Outline incised, and some incision for inner markings, such as scales and nails; the three upper teeth are painted as in 1068, R. 563 (R. pl. 42). This lion is in bad condition, but less dog-like, his scales give him dignity. A great creature like this in a free field seems impossible about 700 B.C.: [527] the second quarter of the seventh century seems more suitable. Nucleus 15, 3·40–3·70 m.

1068. FIG. 32. R. 563 (R. pl. 42). Two new pieces have appeared giving parts of three of the horse's legs. The reverse of one gives claws on the near fore-leg of the lion; another link with our lion plate. The drawing is careless, the incised outline not corresponding with the paint outline; this border, too, is more careless than our border. Both plates have plain lines on the outside rim, but that does not make them necessarily early.[528] Surely the style of the animals is what counts most. The horse is very like Cretan horses,[529] and is all the more likely to be late.

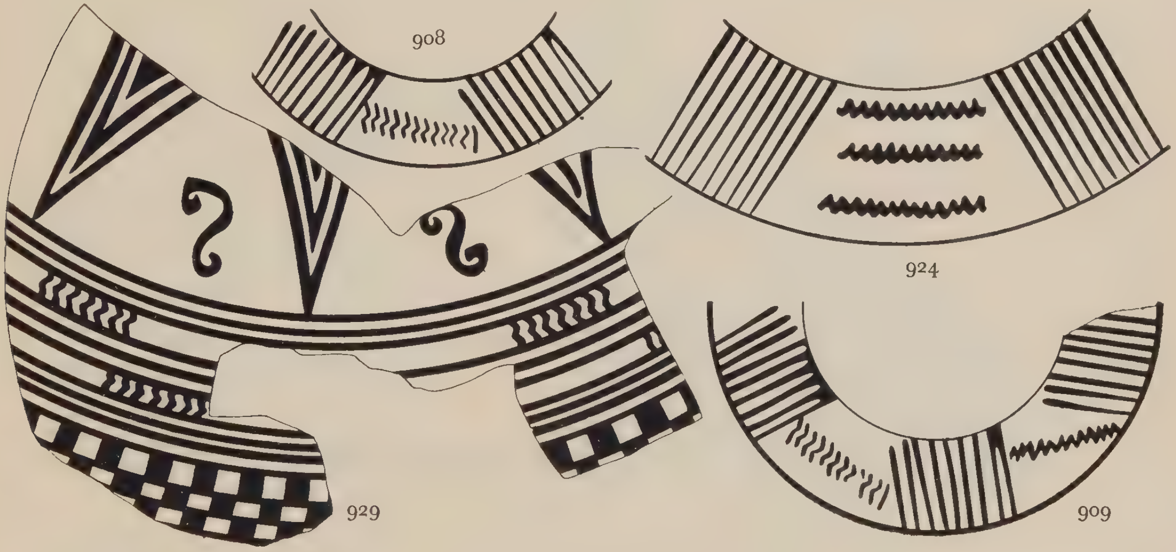

FIG. 29.—OINOCHOAI.

NON-CORINTHIAN IMPORTS

East Greek

Cups.[530]

There are two sections, one from VN 2·35 m. and another from Nucleus 15, and pieces of six other cups.

Late Geometric Hydria.

1069. FIG. 15. R. 591 (R. pl. 44). The handle has now joined the neck and shoulder. It has a very white slip, perhaps Chiot.[531] Could it be Homer's offering?

Oinochoe.

1070. Sherd from the shoulder of an oinochoe. Grazing stag with ornaments between the legs. From Nucleus 12, 3·15 m., and Wall 28. The style and technique is close to R. 594 (R. pl. 44).

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[526] For the shape, cf. *Perachora* I, pl. 123, 16, and p. 63: for the scales *cf.* those on the eagle R. 599 (R. pl. 45).

[527] Robertson's date; see the next.

[528] See R. p. 92. *Cf.* the coarse-painted plain lines on R. 467 (R. pl. 31) and see pp. 264 ff. above.

[529] *Ann.* X–XII 130, from Afrati.

[530] See R. pl. 44 and fig. 51.

[531] *Cf.* Lamb, *BSA* XXXV, pl. 36 *d*, found at Kato Phana in Chios.

‘Melian’

1071. FIG. 34. Pieces of a large storage vase.[532] Rough clay, white slip. Spirals in different directions.

Uncertain Fabric

1072. FIG. 12. Chalice.[533] H. 0·10 m. D. 0·086 m., 0·056 m. Red clay. The lip is off-set. Traces of paint. VN 2·70 m. Body and handle of another. Lighter clay. VN 2·35 m.

Laconian

1073. Part of the handle of a big black-glaze Laconian [534] krater was found in an outlying trench unconnected with the shrine.

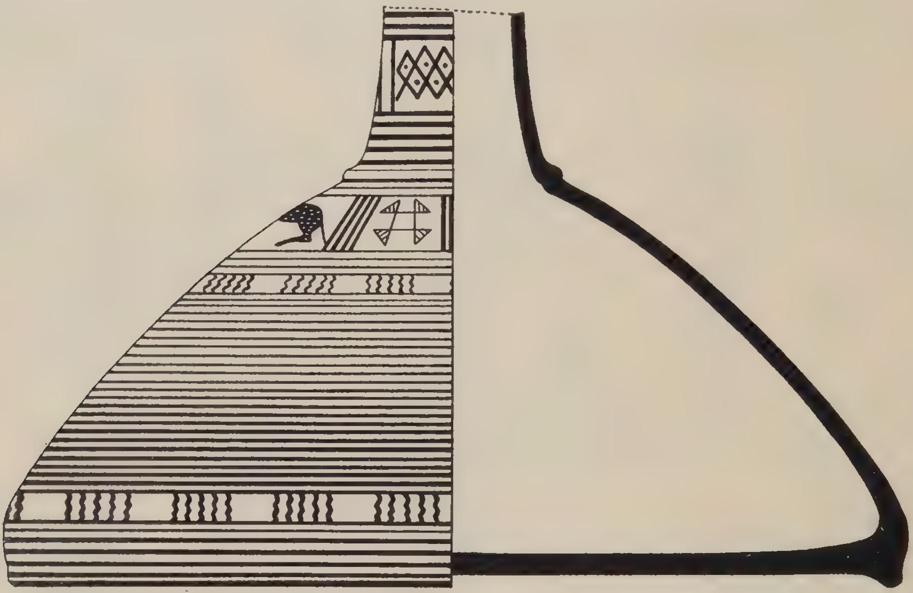

FIG. 30.—CONICAL OINOCHOE 1018. (SCALE 1 : 2.)

Concordance of Numbers used by Robertson with those of Benton

R.	*B.*	*R.*	*B.*	*R.*	*B.*	*R.*	*B.*
14	628	166	976	385	818	479	979
24*b*	670	209	see 1015	400	852	487	871
24*d*	673	229	1053	401	859	490	1019
29	693	245	778	404	861	491	1018
30	694	265	1065	405	865*a*	493	1020
31	695	299	687	412	868	495	1021
41	817	301	690	438	915	503	1002
67	867	305	735	441	911	510	1003
69	see 825	320	708	442	924	518	1004
70	see 821	321	762	444	882	520	995
74	see 846	322	761	449	940	521	1005
75	see 848	323	746	451	925	531	1036
93	see 849	325	741	455	948	537	1040
94	see 845	330	763	457	959	545	1043
96	830	364	800	459	959	548	1049
112	see 839	370	805	466	964	562	see 1058
127	863	371	791	468	P. 143	563	1068
128	866	372	790	470	P. 142	591	1069
157	1024	382	804	477	989	599	807

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[532] The best parallels are unpublished in Mykonos. Perhaps middle of the seventh century. See O. Rubensohn, *AM* XLII 85; M. Launey, *Études Thasiennes* 116 ff. Launey dates these sherds, and with them his temple, too high.

[533] For the shape cf. *Vroulia*, pl. 46, 1.

[534] J. M. Cook’s identification.

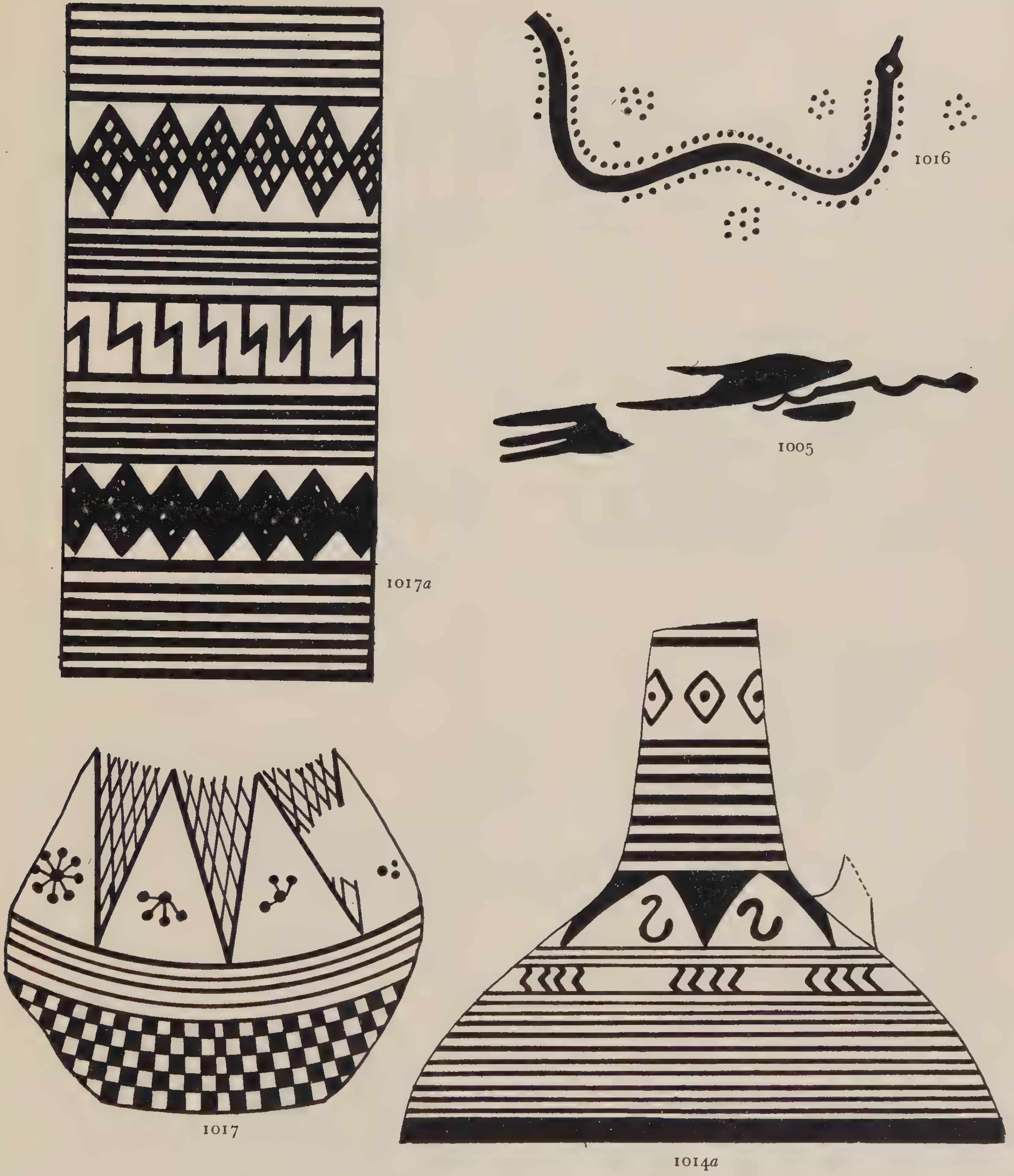
1016
1005
1017*a*
1017
1014*a*

Fig. 31.—Seventh-century Patterns.

INTRODUCTION TO CATALOGUE OF SMALL FINDS

IVORY

After Sparta, Perachora, and Ephesus, Ithaca has the largest deposit of ivories yet found in Greece. Those who still cling to Crete as the purveyor of oriental goods from the East to Greece [535] must explain the notable scarcity of ivories there. Our most interesting object is C. 74: it is flat and decorated on both sides, so it should be a plate. The idea of making ivory vases is no doubt owed to the North Syrian school of ivory workers,[536] but the style and the patterns are those of the finest spectacle brooches at Ithaca (C. 18) and Syracuse,[537]

Anything I say may seem absurd when we have Mrs. Stubbings' study of the Perachora ivories, but I venture a few suggestions. Greek ivory animals on stands have a family resemblance. The artists had a delight in leaving the flanks plain, giving them a sleek look, and to the lovely material its full value; not so Barnett's beast from Nimrud,[538] which is muscled all over. It is a pleasant thought that a few artists travelled around with their stock-in-trade from *panegyris* to *panegyris*, but these artists in Greece developed a Greek style. Were some of them perhaps Corinthians? Why else were Spartan ivories in the seventh century so far in advance of Spartan pottery?

It is amazing to see that Milojčic has included a disk-brooch [539] among the gifts of the 'Illyrian-Dorians' to Greece. Does he really think that the Greeks procured their ivory from the Balkans?

AMBER

The whole excavation was pervaded by ruined amber. Beads were as frequent as they are in Illyrian graves.[540] It is not certain, however, that Ithacan amber came via Illyria.

BRONZES

It has not been generally observed that Miss Lorimer's brilliant attribution [541] of hoplite tactics to the warriors on Early Protocorinthian and Early Attic vases involves nothing short of a revolution in our ideas about Greek bronze-work. Helmets covering the face, metal corselets, metal greaves, all follow on the fixed position of the hoplite-shield, which had to be held on the left fore-arm. Moreover, metal shields could be decorated better than those made of leather; had to be decorated, if a man must see where he was, and keep his place in the rank, now that faces were covered.

This arming was the compelling cause that sent the Greeks chasing all over the ancient world to find bronze to wear, gold to buy it with, and, perhaps we should add, griffins to guard it, for the spinning of complicated bronze dinoi [542] came to Greece at this same time. The visit of Thetis [543] to Hephaistos, the divine smith, is but a scene from contemporary life. All the world was running to the smith shouting, 'Stop casting your old tripods and make me a panoply'. Clearly this was the demand that put a stop to the casting of tripod-cauldron

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[535] R. Barnett on S. Mazzarino, *JHS* LXX 104 and *JHS* LXVIII 24.

[536] See Barnett, *JHS* LXVIII 4.

[537] *NS* 1895, 173.

[538] *JHS* LXVIII, pl. VIII a.

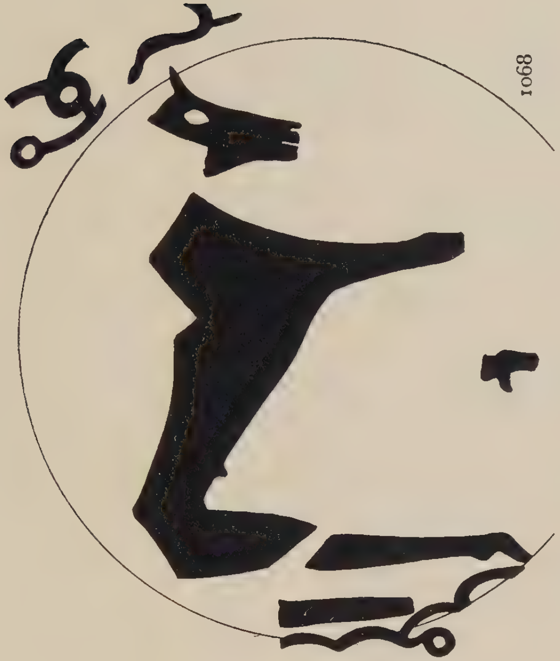
[539] *AA* 1948, fig. 3.

[540] *E.g.* Truhelka. *Wissenschaftliche Mitteilungen Bosnien und der Herzegovina* (*WMBH*) IX, pl. XLIV from Donja Dolina. There are many in the Ashmolean from Hallstatt.

[541] *BSA* XLII 76 ff., 'The Hoplite Phalanx'. E. Miraux would have done well to consult this work before he wrote *Les poèmes homériques*, even if he dislikes archaeological argument. It might have preserved him from talking of Chalkis making long bronze swords at the end of the eighth century, or of Spartans making iron panoplies in the middle of the seventh.

[542] See pp. 265, 296, 297 above.

[543] *Iliad* XVIII 370 ff.



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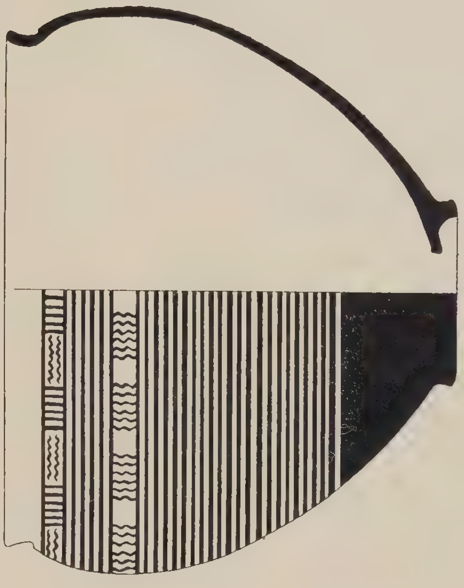

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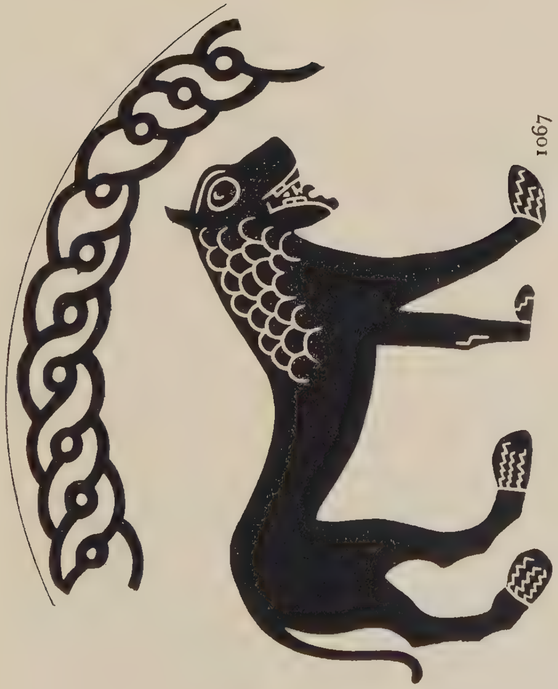

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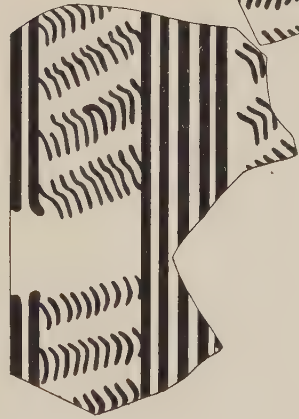

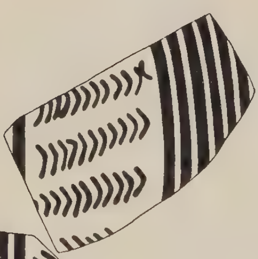

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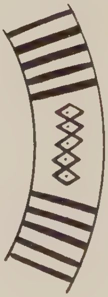

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Fig. 32.—Plates and Other Vases. (Scale 799 (1 : 4); rest (1 : 2).)

adjuncts and caused the substitution of tripod legs and handles made of sheet metal. I suggested [544] that this took place before 700 B.C., which would require a slight raising of Miss Lorimer's date. The new panoply need not appear at once on grave goods, and it can be recognised on Attic Late Geometric vases: the troops on both Athens NM 894 and the Benaki Amphora [545] appear to be moving in drill order, they have charged shields, and the Benaki shields require a fixed position: it would be a shocking omen if the horse on the shield kicked his heels in the air,[546] while his owner was still upright.

Aetos offers only one possible greave [547] and parts of bronze belts of this new armour. Belts would be useful to keep the laced backs and fronts of the corselet together. They cannot yet be distinguished from the baldrics of the earlier shields.

The evolution of the panoply is bound up with the arrival in Greece of dinoi and their adjuncts, with which Ithaca is deeply concerned.

It is always assumed that the ancients used Corfou as a port of call, like the modern packet-boats, but archaeological evidence is all against it. The moderns want to reach Brindisi, Bari, Venice; the ancients were after tin in the West, and the evidence is that they started across the sea from Ithaca, and there is no evidence for connections between Corfou [548] and Greek lands before the foundation of the colony. Even after that, and after the foundation of Leukas, the Corinthians still called at Ithaca, and Corinthian craftsmen worked there.[549]

There are two new bronzes in Ithaca which affect the griffin–dinoi question. The first is no. E. 198, PLATE 66, two horse-griffins on a stand, conjoined in tail. Horse-griffins are interesting because of an oriental ivory horse-griffin,[550] and because of the very long heads of the griffins on a Perachora [551] phiale. I take this phiale to be of the eighth century: it has geometric strokes where later phialai have leaves. The tracing on it is much less accomplished than the tracing on the earliest griffin–protomes. The vase shape is simple, and it is probably one of the earliest Greek metal vases to be decorated. Our griffins are certainly made in Greece, for oriental animals are not put on stands. They can be dated 700 B.C. or a little earlier by the shape of their bodies,[552] which are perfectly Greek, and of a style which is common in Corinth. The closed beak goes back to a kind of griffin which is early in the East,[553] but our bronze must be dated by its latest characteristics.

Another new bronze, no. E. 208, PLATE 66, is a krater on a stand, which has lion's protomes as handles; in fact, it is a dinos. It explains the queer objects formerly called 'amulets' found at Chauchitsa.[554] They have been called 'Hallstatt', and Milojčic [555] would connect them with Dorians from the Adriatic. Now making miniature vases is a Greek habit: we have several at Ithaca.[556] This is a Greek vase-shape, and as for the long-billed birds on Chauchitsa 'amulets', compare them with Protocorinthian bird-protomes.[557] In fact, looking at our aryballos with bird-protomes growing out of the canonical cross-hatched triangles round the neck,[558] it seems possible that animal-protomes may after all have been invented in Greece. It is interesting that a similar dinos on a stand at Olympia [559] has horse-protomes, continuing the horse–griffin connection. Note also that a horse of Corinthian style was found in the same grave group with an ‘ amulet ’.[560] Casson [561] once hailed this horse as the Dorian Geometric horse coming into Greece. In fact, it is the orientalising Corinthian horse on his way out. The shields in these graves had a metal spike, protruding from a boss, so the panoply had not reached Chauchitsa with the models of the new metal vase-shapes.

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[544] *BSA* XXXV 114.

[545] *BSA* XLII, pls. 19 and 22. See also a vase from Eretria (Kourouniotes, *AE* 1903, 14). Boardman *BSA* XLVII, pl. 3, A and p. 7.

[546] See the prostrate lion's head on the shield of the fallen warrior on the vase *PV* pl. 23, 4.

[547] The object perished. I believed it to be a greave but the drawing is inconclusive; belts: E.243, 243*a*, FIG. 35.

[548] Sir John Myres' map, *Who were the Greeks?* 275, fig. 11, should not have a dot on Corfou.

[549] See R. p. 122. Miraux, *op. cit.*, announces himself as insusceptible to archaeological argument, and I cannot hope that he will read this paper, but if he could bring himself to thumb through my plates he might come to see that the close connection between Ithaca and Corinth, which he announced, was, in the eighth century, between Corinth and Ithaca–Thiaki and not Leukas–Ithaca.

[550] *Cf.* Barnett, *Iraq* II, pl. XXVI 2.

[551] *Perachora* I, pl. 51, 3.

[552] See Benton, *JHS* LXX 21, Class II.

[553] Bossert, *Altanatolien* 847, from Çerablus (Charchemish). *Cf.* also *ibid.* 1178, of Urartian style.

[554] See Casson, *BSA* XXVI, pl. V.

[555] *AA* 1948, 35, fig. 3, 22.

[556] See nos. E. 205–208, PLATE 66 and Robertson, E. 183, 184 (R. pl. 49).

[557] Cumae, pl. XLIII 3 and 5; *cf.* pp. 265 ff. above.

[558] Aryballos no. 1053, FIG. 19; see pp. 265, 331.

There is a sound reason for linking protomes and new vase-shapes. Mr. Maryon tells me that the way to make a griffin-protome, is to make a vase and then beat a griffin out of it. This is not the place to discuss Cretan shields, but they must come into that story.

In connection with the passage of new metal vases up the channel of Ithaca, the oinochoe handle E. 202 (PLATE 69) is of especial interest; it almost certainly belonged to the perfectly Corinthian-looking oinochoe found below it, E. 201 (FIG. 36). The shape of the handle is just that of a bronze oinochoe [562] in the Barberini tomb, and the decoration is similar. Our handle is probably cast, the Barberini handle is hammered. The vertical lines and the round end are no doubt derived from Corinthian clay oinochoai,[563] at least as early as the end of the eighth century. Both metal handles rise higher than the plastic handles of the period: metal vases are already developing their own style. The neck of the Barberini oinochoe is more conical than ours, but it may still be derived from Corinth. There is frequent reference above to conical necks on both broad and tall-necked Corinthian [564] clay oinochoai. Dohrn [565] is clearly wrong in trying to derive Etruscan oinochoai with conical necks from biconical Villanovan urns: where could the trefoil lip come from except from Greece?

If we turn to the next plate (40) in the Barberini publication, and look at the round-mouthed bronze jugs, it seems reasonable to conclude that they, too, are derived from a Corinthian shape. They give a parallel to two Ithacan round-mouthed jugs, the shape of whose lips has an exact parallel in sherds of Corinthian fabric with Corinthian Geometric patterns at Aetos.[566] In this connection mention should be made of the four bronze vases in the British Museum, the earliest of which is figured by Jacobsthal; [567] they are said to come from Galaxidi, a little west of Corinth, across the Gulf.

It seems, then, that the Barberini oinochoai and jugs are no less under Corinthian influence than the Corinthian-shaped kotylai on the following plate (41). To judge from the Corinthian sherds found in the companion tomb of Bernardini,[568] the date will be from the late eighth century onwards.

The Aetos handle, then, is probably the earliest known Greek metal handle, and it is possible to detect from it other early Greek handles [569] with similar decoration.

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[559] *Olympia* IV 416, pl. XXIII.

[560] Benton, *JHS* LXXII 119.

[561] *AJ* I 199 ff., pls. VI and VII.

[562] *Memoirs of the American Academy in Rome*, pl. 39.

[563] Cumae, pl. XXX. There are many handles of this type at Aetos among local Tall-necked Oinochoai; three are recorded, 996, 999, 1010, but there were many more; one on a vase of the style of 970 is probably earlier than the others. *Cf.* also *BCH* LXXVI 338, fig. 12, perhaps a hydria, and perhaps not from Corinth. See p. 306.

[564] *E.g.* R. 129 (R. pl. 8), R. 171 (R. pl. 10); 900–902, PLATE 59, also 971, PLATE 62. See also p. 317 above.

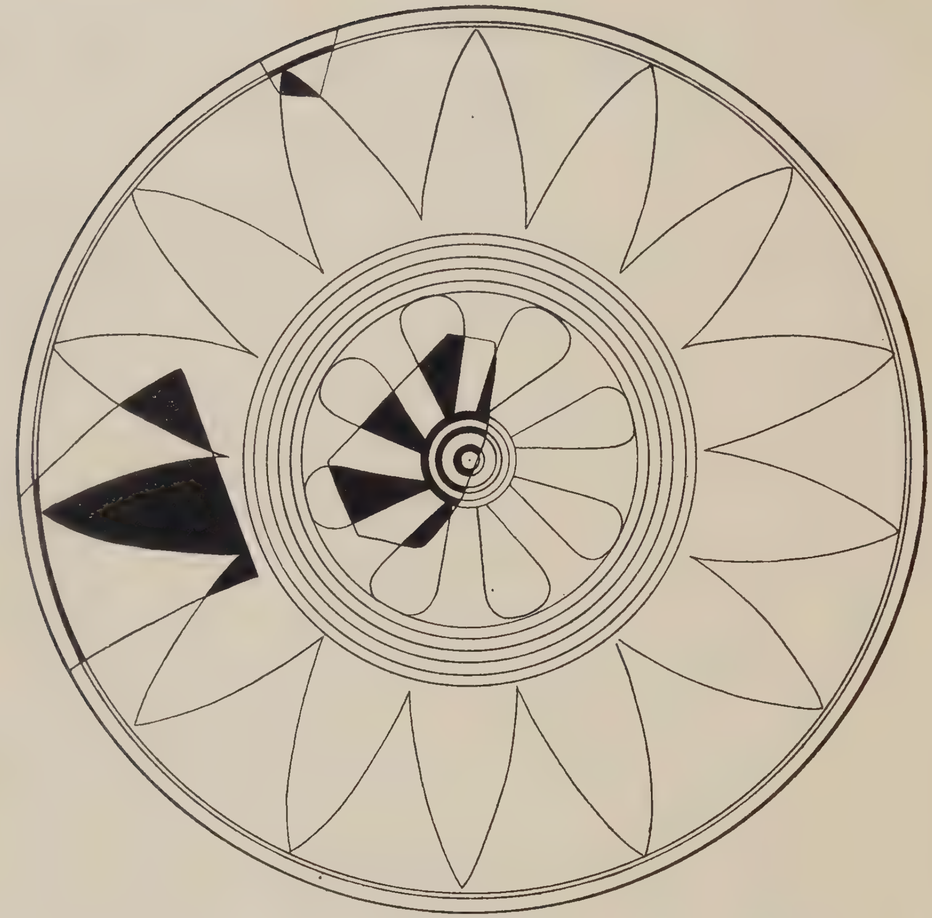
[565] *Schwarzfigurige Etruskische Vasen* 13. The evidence from Aetos shows that conical necks are not ungreek, as Dohrn would have it.

[566] R. 414, 415 (R. pl. 27 and fig. 44); 1033, PLATE 16; 1034, FIG. 13.

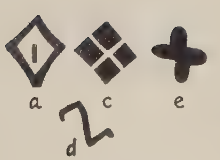
[567] *JdI* XLIV 213, fig. 20, British Museum no. 86. 3–12. 2. There are three oinochoai and a round-mouthed dipper. The oinochoe is later than the Barberini vase; the handle, though still hammered, has an engraved palmette. The group is not homogeneous, the handle of the dipper is cast and zoomorphic. I am grateful to Professor Ashmole for discussing the group with me.

[568] *Memoirs of the American Academy in Rome* III, pl. 44. The two kotylai rims are eighth rather than seventh century, the kotyle handle has bars and not the seventh-century decoration of horizontal lines. The base is not from a kotyle but from a conical oinochoe like so many at Aetos: date about 700 B.C. (*e.g.* R. 177, 178, R. pl. 11).

[569] E.g. *Olympia* IV 656, pl. XXXVI.



1065



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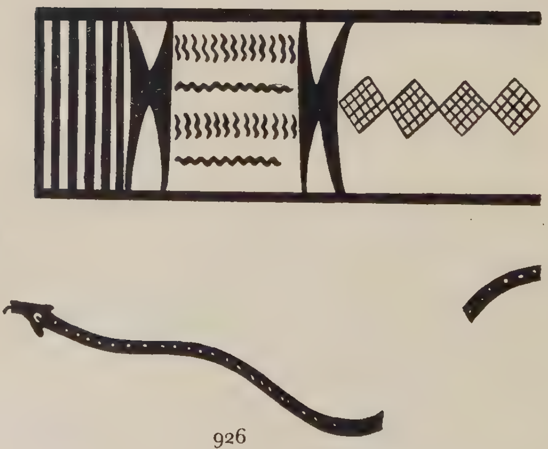
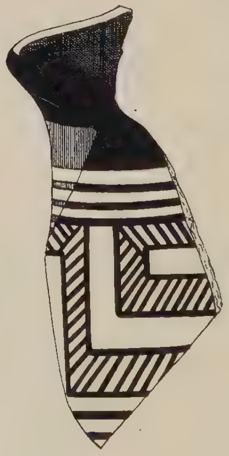


926



878

Fig. 33.—A Plate, and Oinochoe Patterns. (Scale 1 : 2.)

There is little virtue in the primitive human, E.189 PLATE 64, except that it is in a context belonging to the ninth century or earlier. This time I hazard no guess as to its sex.[570]

I have shown elsewhere [571] how the Ithaca horses on stands follow in the sequence of the horses on tripod-handles. It is instructive that one of the earliest horses on stands should have been found with a globular aryballos, on which were goat-protomes. As Telemachos said, horses are not of much use in Ithaca, and this large stable should perhaps be connected with the recent revival of the Olympic games. Aetos must always have had a large goat population, and our goat on a spout,[572] no. E.200, is a champion.

A few more possible connections with Italy are mentioned in the text. The 'SOS' pin no. E.215 probably came down the Adriatic.[573] These have been called hair-pins, but they were not so used in Illyria, for they are found there with a forest of chains and dangles.

Perhaps Hallstatt influence is responsible for the plague of small bronze beads that infested the site, as if one of those long chains [574] had come adrift at Aetos.

'Bird cages' have been claimed as Northern imports (see E.197, E.239). They certainly jingled on Northern bridles, but they have been in Greece since Mycenaean [575] times.

Since writing this paper I have begun to wonder whether the Corinthians were perhaps using Ithaca as a base for metal trade up to the North-west. That would explain the presence of fine bronzes in the shrine, one of which (tripod 1) [576] is of the ninth century. No other tripods have been analysed, but the analysis [577] of the Ithaca tripods is unlike that of other Greek bronzes. They have points in common with Hephaistos' strange melt.[578] Homer makes a ship [579] engaged in the metal trade call at Ithaca.

IRON

This section is unsatisfactory. The condition of the material was poor, it was photographed with bad films in 1947 and then fell to pieces. There is a note-book with drawings, but it has not been possible to prepare these for publication, so I offer the present illustrations with apologies.

There is a large iron hammer, found in the former excavation, suitable for use by a smith, and it raises the question whether there was a forge at Aetos. O. Davies mentions iron slag [580] from the site. There are also two objects like manacles from the former excavations. They may have been iron swords.[581]

Our most important iron finds are arrow-heads, spear-heads, and knives, nearly all in VN. The arrow-heads (N 1–4) are tanged, and suggest that the whole arrow was sometimes made in one.[582] Kübler compares his iron arrow-head [583] to Mycenaean arrows, but the comparison will not hold, for his arrow-head is socketed: Mycenaean arrow-heads are all

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[570] Mr. Amandry chid me (*BCH* LXXIX 39) for calling Polis Bronze 15 male (*BSA* XXXV pl. 16). It may be a woman, but if so, we must take her off the tripod, and has she not a beard? Homann-Wedeking, in giving a ninth-century date (*Grossplastik* 21), does not mention that I now suggest a date in the second quarter of the eighth century. See the next note. Male dancers on the Analatos Hydria are very close to our bronze; at least I have always supposed them to be male (*BSA* XXXV, pl. 39).

[571] See *JHS* LXX 21.

[572] *JHS* LVIII 226; here PLATE 64.

[573] See Filow, *Trebenischte* 34. *Cf.* Fiala, *WMBH* VI 68, from Sanskimost. For Robertson E. 14, cf. *AO* pl. LXXXIII *g.*: the lower part does not belong (my photograph, and my error). Robertson E 15 is also of this type which was also popular in Illyria. The double-pin from Sanskimost was found on the breast. See also *ibid.* VIII 28.

[574] *Hallstatt* 1492, pl. XXI.

[575] Wace, *Chamber Tombs*, pl. IX and p. 94, 7 *g*.

[576] *BSA* XXXV 64, fig. 14, pl. 10.

[577] *Ibid.* 73. *Cf.* the finding of nickel in a bronze from Olympia, *ibid.* 132.

[578] *Iliad* XVIII 474 ff.

[579] *Od.* I 181 ff.

[580] *BSA* XXXV 137, 'Aules' for Aetos.

[581] Cf. *Kerameikos* IV, pl. 38.

[582] Cf. *Olympische Forschungen* I, pl. 62 *h*.

[583] *Kerameikos* IV 27, grave 28, M 34, pl. 38.

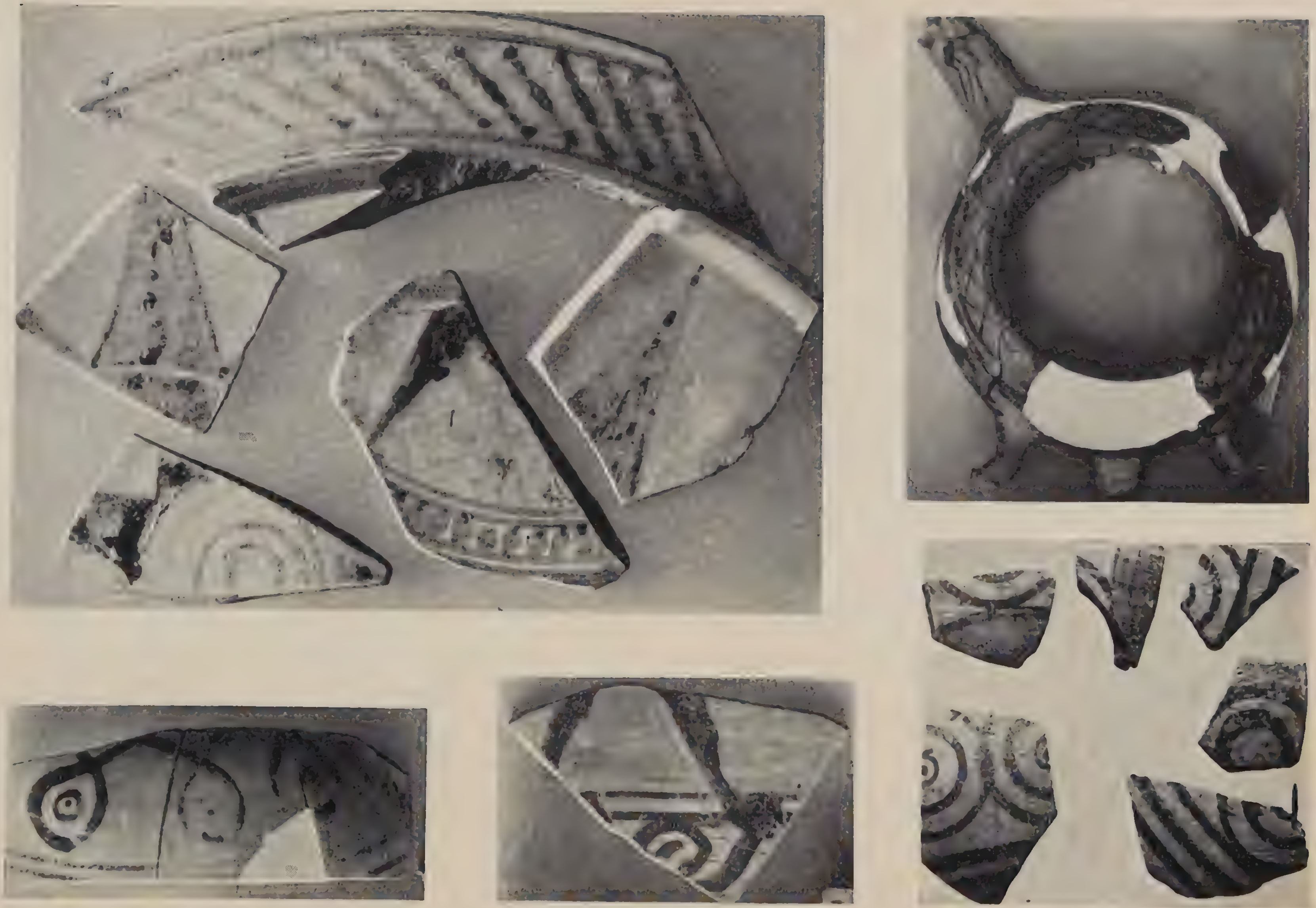
1063
1043
1064
1066
1064a
957
812
1071

FIG. 34.—ORIENTALISING PATTERNS. (SCALE : 1064, 1064*a*, 1066 (3 : 4); rest (1 : 2).)

tanged. There is, however, an interesting parallel with a bronze arrow-head in Vrokastro,[584] which suggests an attempt to apply iron technique to bronze. Clearly iron and bronze weapons must be considered together.

Spear-heads have been little studied in Greece. D. Robinson suggests [585] the fifth or fourth century B.C. for the appearance of the iron spear-head, although that was disproved at Halos in 1912.[586] The best modern account is that of H. Weber,[587] but it has two blemishes:

(1) failure to make use of the iron spear-heads in the Kerameikos,
(2) misinterpretation of a ceremonial spear-head.

The earliest iron spear-heads in Greece are derived from bronze spear-heads, which are of Mycenaean type,[588] such as Weber rightly detected in his pl. 58 *d*, with the ferule going to the top of the blade. He might have put pl. 58 *c* with it, which has a similar mid-rib: Mycenaeans had both heavy and light spears. He failed to see that iron spears in Protogeometric tombs [589] are also of this type. His earliest iron spear-head, pl. 59 *a*, follows on and may well be Geometric: our Ithacan spear-heads are similar. There is no place anywhere near this sequence for the colossal decorated bronze spear-head (his pl. 56). Weber thinks it must be Geometric because similar decoration is used to render spots on a Geometric bronze horse. It is a late Geometric horse, and the panthers on the Kerkyra pediment have similar spots too.

No ordinary man is ever depicted in Greek art with a colossal [590] spear-head. He would look silly, walking about with a spear-blade half as long as himself. The Promachos could carry a spear-blade a metre long if she wanted to signal to Sounion, or Oinomaos, standing forty feet up on the pediment of the temple of Zeus at Olympia. In Greece a colossal weapon implies colossal sculpture, so probably the fifth century.

The dedication of both arrows and spears would be particularly suitable at Odysseus' shrine.

Fourteen knives were photographed and described, and there were pieces of many more, but they were so broken that I came to distrust my reconstructions. Many parallels to them and to the spear-heads could be found in the graves excavated by Truhelka at Donja Dolina.[591]

CATALOGUE [592]

TERRACOTTA ALTAR

PLATE 64. Back, one side, part of front, and most of top. Width, 0·12 m., estimated length 0·13 m., height 0·135 m. Light golden clay. Top like O. Broneer's [593] fig. 1, except that the hole goes right through, and is evidently intended for drink offerings. On left side, Dionysiac donkey walking right and braying. Near fore-leg is outlined with incision, also the shoulder and the ear. Incision on hock on near hind-leg, and on tail. Red on belly and in the pupil of the eye. Red and black tongues alternately between black darts on all three tiers of the sima (*cf.* Broneer, pl. LII 3). The left side is

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[584] Hall, *Vrokastro* 105 *c*, *d*.

[585] *Olynthos* X 411.

[586] Wace and Thompson, *BSA* XVIII 27, 5 from the Pyres, and so Geometric.

[587] *Olympische Forschungen* I 146 ff.

[588] *Ibid.*, pl. 56.

[589] *Kerameikos* I, grave 17, pl. 76; *ibid.* IV, grave 34, M 8, pl. 38.

[590] Archaeologists who concentrate on decorative motives forget that simple motives can recur independently. Miss Lorimer has often told us that Geometric spears were flung. No modern thrower would consider this weapon streamlined. These spearheads may be connected with Etruria. There is a pair in the Ashmolean Museum from Viterbo and one in the Villa Giulia from Narce.

[591] *WMBH* IX, plates.

[592] My arrangement of the small finds has differed a little from Robertson's. The Aetos terracottas are being published separately by Mr. R. V. Nicholls. I have tried to illustrate beads, and as beads are best photographed together, I have listed them together except those of bone and bronze.

[593] At Corinth, *Hesp.* XVI 214; see also G. R. Davidson, *Corinth* XII 130. For our animal, *cf.* the François Vase (*FR* pls. 11, 12), *NC* no. 1073 (a horse) and no. 1173 (like ours). Note the Altar Painter's liking for large single figures, which is more characteristic of Middle than of Late Corinthian vases. For Broneer's lion (*op. cit.* pl. 51), *cf.* the Chimaera of Payne's Chimaera Painter, *NC* pl. 30, 8. The stylistic order of lions is Chimaera Painter, Broneer's lion, the lion on a Caeretan hydria *AD* II pl. 28. The donkey on that hydria is like our donkey.

The artist could have found models for our beast on the Paxoi Islands, where donkeys hold carnival all Easter, all loose, all together, clattering down the village street in the darkness, braying to their God.

0·105 m. wide at the foot, 0·110 m. at top of picture. The back is bare. There was another quadruped on the front, also walking right.

Our altar gives a complete picture, though a worn one. Its similarity to the other *arulae* published by Broneer leaves no doubt that its provenience too was Corinthian. The sparing use of incision for inner markings and the simpler painting above suggest that it may be rather earlier than the others, and they may be earlier than Broneer thought; all the Corinthian contacts mentioned belong to the early sixth century. I suggest the second quarter of the sixth century for the *arulae* with painted tongues [594] and single or two-group figures. VN 2·15–2·25 m.

STONE [595] SEAL

B.13. PLATE 68, FIG. 36.[596] Opaque dull maroon-coloured stone. 0·012 × 0·006 m. Nearly rectangular, broken below. A flat fish,[597] perhaps ῥόμβος, the turbot. The style seems Geometric. Found VN 2·70 with cornelian beads M.60–2.

IVORY AND BONE

(*a*) FIBULAE

Spectacle Fibulae.

C.46. PLATE 63. Ivory. Large. L. 0·135 m. H. 0·065 m. Iron plate behind, L. 0·10 m. Zig-zags round two big circles; small holes in the centre of the circles. Nucleus 16.

C.47. Ivory. Small fragment of a rim of a similar fibula. Twist on the rim. May be painted white. VΘ Nucleus 12.

C.48. PLATE 63. Ivory. L. 0·052 m. H. 0·023 m. One small circle missing. Two rows of dicing on large circles. VN 2·50 m.

C.49. PLATE 63. Bone. L. 0·055 m. H. 0·023 m. Simpler decoration, frieze of concentric circles round the rim. Part of upright and clasp of iron pin remaining, besides the plate. Two bronze pegs visible in front, probably securing the iron plate. Four holes for inlay, which was fastened by a peg: three bone circlets fit, see C.73, PLATE 67. Stained by bronze. VN 2·10 m.

C.50. PLATE 63. Bone. Replica of number 4. Iron plate. VN 1·90 m.

C.51. PLATE 63. Bone. Similar style but poorer workmanship. L. 0·058 m. H. 0·03 m. Four peg holes. The incision of the lower circle has not been completed. Bronze stains, but no iron stains. VN 2·43 m.

Ivory, Amber, and Iron Fibula.[598]

C.52. PLATE 64. This fibula was found complete, but fell to pieces. Good specimens can be seen in Syracuse. Two ivory tubes and two ivory plates on bronze wire were attached to an iron pin. VΘ Nucleus 12.

C.53. Fragments of a similar fibula. Here the connecting wire seems to be iron, and it is still covered with amber. VR 2·15 m.

Fibula?

C.54. Fragments of a large circular or oval plaque. Part still adheres to a piece of iron. L. 0·025 m. There is a bronze peg through the iron and a peg through the ivory, and iron stains behind. There is a standing griffin with a papyrus polos; also a human figure. Wall 31.

(*b*) IVORY SEALS

(i) *Plastic Animals.*

C.55. PLATE 68. Lion couchant; the head may be turned back (not illustrated). On the reverse, a sphinx walking. L. 0·05 m. W. 0·04 m. VR 2·39 m.

C.56. PLATE 68. Lion couchant. L. 0·03 m. W. 0·02 m. Palmette on head. Diamonds incised on mane and a fringe.[599] On the reverse, a helmet (not shewn). W 3·15 m.

C.57. PLATE 68. Lion [600] couchant, frontal. L. 0·015 m. W. 0·015 m. Rather like a beetle. On the reverse, winged sphinx walking. End of eighth century. Nucleus 15, 3·25 m.

C.58. PLATE 63. Base of reclining animal, probably a ram (not shown). L. 0·028 m. W. 0·015 m. Roughly incised on the reverse. VF 1·95–2·10 m.

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[594] T. J. Dunbabin kindly showed me the Perachora altar. It has smaller animals and a different decoration.

[595] See other stone beads M.1, M.51, M.52.

[596] The scale of Miss Petty's drawing is 2 : 1.

[597] See d'Arcy Thompson, *Glossary of Greek Fishes* 223. Ῥόμβος may also appear on r.f. fish plates, *cf.* L. Lacroix, *Plats à Poissons*. B. Buchanan points out to me the frequency of representations of flat fish in Egypt. Curiously enough his reference, Petrie, *Scarabs*, pl. XXXIX 42, has scales reminiscent of seventh-century Greece. See also Petrie *Amulets* no. 257*a*. The Nilotic fish are not quite so flat as ours, perhaps they are Nile perch.

[598] These should have been listed with the other compound fibulae: see E.229 below.

[599] Similar decoration on a lion in Sparta (*AO*, pl. CLII 3).

[600] The lion might be by the same hand as Hogarth, *Ephesus*, pl. XXX 7 and 11 from Kamiros. The sphinx is rather more determined than the centaur *op. cit.* pl. XXXI 13. The straight wing is unusual among our seals, and so is the lion. *Cf.* also Lamb, *BSA* XXXV 153, pl. 33, 1–4. It was found in a Late Geometric deposit at Kato Phana in Chios.

C.59. Base of hoofed animal. L. 0·023 m. W. 0·012 m. Reverse may be plain. VH 2·0 m.

C.60. PLATE 63. Base of a hoofed animal, probably a ram (not shown). L. 0·035 m. W. 0·02 m. Feline with long tail and paws outstretched, crouching. Nucleus 15, 3·17 m.

C.61. PLATE 68. Half of ram couchant. L. 0·03 m. Perhaps a lion's claws in the centre. Uncertain design on reverse. Nucleus 8, 2·15 m.

(ii) *Round Seals.*

C.62. PLATE 63. Winged lion, sitting.[601] D. 0·026 m. Head turned, one paw raised: star below. On the reverse, bud and tendrils. Protocorinthian pattern.[602] W3, 1·75 m.

C.63. PLATES 63, 64. Running man.[603] D. 0·037 m. Bearded, layer hair. Hands raised. Reverse, double rosette. VS 2·50 m.

(iii) *Oval Seal.*

C.64. PLATE 63. Frame of concentric circles. L. 0·022 m. Uncertain if there is another design. W7, 1·90–2 m.

(iv) *Rectangular Seal.*

C.65. PLATE 63. Anchor ornament. L. 0·02 m. One side only preserved. Nucleus 12, 2·65 m.

(*c*) IVORY FIGURINES

C.66. PLATE 63. Another member of our Aetos monkey[604] family. H. 0·015 m. W. 0·009 m. It has the same impressed circular eyes, but it looks different, because it has kept its wide ears which the others have lost. VΘ 2·91 m.

C.67. Sphinx.[605] Paw and layer hair. There may have been a design behind. Nucleus 15, 3·00 m.

(*d*) IVORY AND BONE BEADS

C.68. PLATE 69. Cylindrical. L. 0·027 m. Wall 28.

C.69. Fragment of an elliptical bead, pierced horizontally.

C.70. Round. D. 0·02 m. W. 0·005 m. Probably no design. Pierced horizontally. VH 2·05 m.

C.71*a*. PLATE 63. Rectangular bone bead. Nucleus 5, 2·05 m. Perhaps part of a fibula.[606]

C.71*b*. Fragment of another. VF 2·10 m.

C.72. PLATE 63. Round bone bead. D. 0·015 m. Pierced vertically. Perhaps also part of a fibula. VH 2·10 m.

C.73*a*, *b*, *c*. PLATE 67. Circlets, perhaps part of spectacle fibulae. See under C.49.

(*e*) MISCELLANEOUS IVORIES

C.74. PLATE 68. Part of a large object, probably a plate.[607] W. 0·01 m. Ornamented with twists and zig-zags. Similar decoration on both sides. VΘ Nucleus 12.

C.75. Ball. H. 0·027 m. Perhaps a flower; it is pierced. Oval depression on one side, L. 0·02 m., W. 0·08 m., D. 0·05 m., perhaps for the finger of the holder. This would involve a large statue. Nucleus 12.

C.76. Uncertain object much damaged. Outside edge inscribed with semicircles. Straight lines probably mean that it is not a spectacle fibula. Ornamented with twists. VΘ Nucleus 12.

AMBER[608] (EXCLUDING BEADS)

This amber is in bad condition.

D.28. PLATE 68. Long ornament. L. 0·045 m. Broken at the end, perhaps a drop ear-ring. VN 2·60 m.

D.29. Remains of brooch with iron pin. Found in W, under the oinochoe with an amber bead.

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[601] Not unlike *AO*, pls. CXLIV and CXLVI 2. The photograph in *AO* is upside down.

[602] See references in *BSA* XL 54.

[603] For the position of the legs cf. *AO*, pl. CLV 4 and the head is as neat as *ibid.* CLXVII 1. The hair is different. *Cf.* the winged runner on a seal from Perachora (*JHS* LXVIII, pl. IV) and on a Protocorinthian aryballos of the second Bf. style (*PV*, pl. 20).

[604] R. C 1 (R. pl. 48, p. 115), where see references. Note also a plastic aryballos at Sparta, *AO*, pl. XLIII 4, probably of Corinthian clay. The author's story of a snake and a lost head is not clear. The baby's left arm clasps his mother's right shoulder, his head is against her other cheek, his tail curls up below on his left. She is sitting on her tail and holds the middle of it. The group would tend to be less peaceful if she found she was sitting on a snake. McDermott (*The Ape in Antiquity*), trying so hard to find a Protocorinthian monkey, has missed the real one. Furtwängler, *Aegina*, pl. 112, 4, must be another family group. The creatures cannot be of different species as Furtwängler thought.

[605] R. Barnett, *JHS* LXVIII, pl. V, from Perachora.

[606] See Blegen, *AJA* XLIII 440, fig. 23, 2.

[607] See p. 338 above.

[608] See also M.63–79, beads.

BRONZE

Bronze is a conventional term. I have not been able to analyse the material.

I. Miscellaneous

Figurines.

E.189. PLATE 64. A human being. H. 0·06 m. Indications of mouth, eyes, and nose; flat body, triangular face. No hands or feet, arms outstretched. It was found under Wall 27 with Protogeometric and Early Geometric pottery. There is no very close parallel.[609] It is as primitive as the terracotta figurine H. 116,[610] and resembles it in its thick neck and triangular face. How like that figurine is to Robertson A. 20 (R. pl. 46)! Is it possible that all three figurines may be Late Geometric and not Protogeometric? The flat head and triangular face appear again in the terracotta sphinx at Polis.[611] From W3, 1·60 m.

E.190. PLATE 65. Horse. L. 0·045 m. H. 0·055 m. W. 0·025 m. Bad condition. Mouth and ears missing: very little modelling. Stand has two zig-zags inside single bars: double bar in the middle. Bent stand. W5, 1·35 m.

This horse approaches nearest to the rather wobbly horses on tripod handles.[612] It has no mannerisms. Middle of the eighth century.

E.191. PLATE 65. Horse. L. 0·05 m. H. 0·06 m. W. 0·025 m. Head missing. It is more upright than the last, and although it is not tall, it is stiff and mannered. On stand three bars supporting three lozenges. My class II.[613] VN 2·47 m.

E.192. PLATE 65. Horse. L. 0·045 m. H. 0·088 m. W. 0·02 m. Similar, a poor mouth. No middle bar below stand. W10, 1·50 m.

E.193. PLATE 65. Horse. L. 0·07 m. H. 0·115 m. W. 0·025 m. Tail end, near hind leg, and point of mane broken. Snake [614] below centre of stand, so it is a seal. V5, 3·18 m.

E.194. PLATE 65. Horse.[615] L. 0·055 m. H. 0·10 m. W. 0·025 m. Off hind-leg missing. More modelling about mouth and nose. Knees high. On stand, two zig-zags above three bars. Found inside the tall kyathos 782, FIG. 10; to be dated about 700 B.C. VH 2·10 m.

E.195. PLATE 64. Stallion. L. 0·075 m. H. 0·068 m. W. 0·026 m. Surface in better condition. Better modelling, the curves are more naturalistic. Neck broken and bent. Feet not on the edge of the stand. Eyes were inlaid. One zig-zag between bars on the same level under the base. The head was found in VS 2·75 m., the rest VΘ 2·10 m., with terracottas. This is a seal.

E.196. PLATE 65. Stallion.[616] L. 0·085 m. H. 0·123 m. W. 0·03 m. Nicked mane ending in a crest between the ears. Traces of modelling for eye: mouth an incised line, *cf.* E.195. Contour divides face from neck. Tail is raised. Contours flat, body stick-like. The neck is flat and large. Sex strongly indicated, knees more faintly. On stand three zig-zags cut out above four bars. Class III. W3, 1·75 m. First quarter of the seventh century.

E.197. PLATE 66. Dog (?) on bird-cage. L. (dog) 0·045 m. It is a dog, to judge from its tail, which seems to be the most reliable part of an Ithacan animal. Moreover it has the chief points of a Molossian hound.[617] M 2·10 m.

Bronze Griffins.

E.198. PLATE 66. Two griffins. L. 0·054 m. H. 0·064 m. W. 0·013 m. They are back to back with a joint tail on an open-work stand, and they are joined by a basket-like handle also. Their bodies are like those of my Class II horses. Nucleus 16, 3·50 m. Comparing photographs taken before and after cleaning, they seem to have short ears and birds' beaks, so they are griffins. Found on the south side of Wall 28.

Bronze Seal.

E.199. PLATE 66. Horses' heads, back to back, on two ropes [618] rising from a hoop. Lower surface round and damaged. VΘ 1·95 m.

Goat on a Spout.

E.200. PLATE 64. L. of spout 0·102 m. H. of goat 0·06 m. One ear and one horn lost. The other horn broken. The articulation is still angular, and must originally have been more angular still. Note the sharp grooves defining the shoulders and hind legs and neck. The eye seen from the side is, of course, fully frontal and very large. The horn is ribbed.

The most noticeable feature of the composition is the challenging attitude of the goat, posing itself, as goats do, on a mountain skyline. The taut rectangular body is characteristic of Late Protocorinthian painting, *cf.* the goats on an aryballos in Syracuse:[619] earlier bodies are slimmer,[620] later bodies are more clumsy and naturalistic.[621] But Protocorinthian animals are always moving: they must do so in painting, to show all their legs, even the heraldic griffins of the aryballos, who are really at rest. If the contours of our goat seem somewhat rounder than those on the vases, it must be remembered that the latter have been drawn out flat. They look rounder on the round vase.

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[609] Cf. *Olympia* IV, no. 235. E. Kunze and Hans Schleif, *Bericht über die Ausgrabungen in Olympia*, 1940/41, pl. 32, 1.

[610] *BSA* XXXIII 60–1, figs. 42–3.

[611] *BSA* XXXIX, pl. 18, 1.

[612] See *JHS* LXX 21, pl. IV, *b*.

[613] See *loc. cit.*

[614] Cf. *Olympia* IV, pl. XIII 205 *a* (stag), 208 (rabbit).

[615] *JHS* LXX, pl. V, *b*.

[616] *Op. cit.* pl. V *e*. *Cf.* Attic horses on vases at the turn of the century (Cook, *BSA* XXXV, pl. 47); also the horses of the Dioskouroi, *JHS* LXX, pl. V *d*.

[617] *Cf.* the hounds on kotyle 696, FIG. 10 and also FIG. 40. See *Olympia* IV 413, pl. XXIII.

[618] Rope decoration: *cf.* the handle with bull's head and double ropes at both sides, *Olympia* IV, pl. XXIX 572, also 571. Siamese bulls: *Olympia* IV, pl. XXV 477.

The spout on which the goat stands was nailed to a rounded surface, to a vase, and we think immediately of the seventh-century spouted oinochoai in Crete,[622] often with animals' heads as spouts. But the goat can hardly have belonged to an oinochoe, the angle would have been too steep. There are, however, miniature spouted dinoi at Sparta,[623] and a sixth-century bronze horse at Leonidi appears to be carrying on his head the trophy that he must have won in some race.[624] The dinos had a rolled handle behind, balancing the spout which would carry our goat quite comfortably.

An animal on a spout is clearly an orientalising feature, and to be correlated with the contemporary burst of orientalism in the Cretan shields.[625] Professor Jacobsthal calls my attention to the frequency of wild goats on the Luristan [626] bronzes.

Bronze Vases.

E.201. FIG. 36. Oinochoe, neck and part of body. Preserved only in a sketch. It is of a Protocorinthian [627] type, with a long oval body. Nucleus 14. VN 2·15–2·25 m. Found with a beaded fibula, E.224, below E.202.

E.202. PLATE 69. Handle. H. 0·14 m. W. 0·02 m. Probably cast.[628] The bottom is lost, but was probably rounded without decoration. Broad rivet hole at the top, three double vertical fillets. Found just above E.201 among terracottas. VN 2·10 m.

E.203. PLATE 66. Part of mouth and body of a globular aryballos. D. of rim 0·035 m. Handle was attached by three rivets.

E.204. Hemispherical bowl.[629] D. 0·11 m. Fragile. Rim thickened. This simple type was probably long-lived, but it was used to cover Early Geometric funeral urns. VN 2·45–2·30 m.

Miniature Vases.

E.205. PLATE 66. Oinochoe. H. 0·065 m. Slim elongated. Wide handle. VN 2·30 m.

E.206. PLATE 66. Lustral Oinochoe. H. 0·075 m. VN 2·70 m.

E.207. PLATE 66. Pithos. H. 0·095 m. Flat below. Two horizontal ring handles. VN 2·30 m.

E.208. PLATE 66. Krater on a high foot. H. 0·065 m. Two lion protomes; two holes probably for the attachment of a lid. This object is like Casson's 'amulets' [630] in Macedonia, once with Hallstatt birds' heads on the lids, or on the rim as here. Although the thing has so much in common with the Macedonian bronzes, yet there is a sharp stylistic difference. These are lions' heads like those on the Bernardini dinos. Late eighth to seventh centuries. Wall 21, 1·88 m.

Handle.

E.209. Handle. Rectangular fixed handle. L. 0·045 m. H. (with tang) 0·05 m. The tang is too long to be attached to a metal vase: perhaps attachment to a wooden object.

II. PINS

The great event since Payne wrote on pins has been the publication of the Kerameikos material. It confirms the Protogeometric nature of Heurtley's pin [631] and gives a further link between Attica and Ithaca. It seems likely that Payne's group from Akraia,[632] and the pins found at Tegea,[633] may be descended from these monsters, perhaps even my nos. E.210–213, though they have no disk.

E.210. Pin-head. L. 0·035 m., shaft 0·085 m. Incomplete. Perachora type *F*.[634] See also Robertson E.26. O 2·30 m.

E.211.	L. 0·11 m.	Incomplete below, complete above.	VΘ 3·40 m.
E.212.	L. 0·22 m.		W4, 1·80 m.
E.213.	L. 0·105 m.		W1, 1·86 m.

See Robertson, E.28 and 29, but they may not be spits. They seem frail and small when compared with spits elsewhere. They are riffled.

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[619] *VS*, pl. XXXVII 5.

[620] *PV*, pl. 12.

[621] *NC*, pl. 14.

[622] Levi, *Ann.* X–XII, figs. 147, 236, 291, 412; also the spouted dinos fig. 420.

[623] Lane, *BSA* XXXIV 125, fig. 13.

[624] *PAE* 1911, 272 from the shrine of Apollo Tyritas.

[625] See Benton, *BSA* XXXIX 52 ff.

[626] A. Moortgat, *Bronzegerät aus Luristan*, pl. V ff.

[627] See *NC*, fig. 10. Drawn by N. Bruce.

[628] It is flat behind and the surface decoration is rounded. See p. 341 above. The bronze vases *Perachora* I, pl. 61 have simple handles, but are probably later; *ibid.* pl. 68, 17, may be early.

[629] Cf. *Perachora* I, pl. 62, 6; also the 'Warrior Grave' (*AA* 1934, 240, figs. 26, 27) in the Kerameikos at Athens.

[630] *BSA* XXVI, pl. V. Cf. *Olympia* IV, no. 416, pl. XXIII, with horse protomes. See pp. 265, 340 above.

[631] *BSA* XXXIII 61; cf. *Kerameikos* IV 30, M 115. Desborough thinks Heurtley *op. cit.* pl. 6, 84 is of Attic style. The clay is Attic, not Corinthian as Desborough suggests *Protogeometric Pottery* 277.

[632] *Perachora* I, pl. 17.

[633] *BCH* XLV 378, 379.

[634] *Perachora* I 173, pl. 74, 9. A favourite at Sparta, *AO* pl. LXXV.

E.214. PLATE 66. Head of a 'Tam o' Shanter' pin.[635] L. 0·025 m. *Cf.* Robertson, E.24.

E.215. PLATE 66. 'SOS' pin. L. 0·082 m. Frequent in Illyria.[636] Found at Chauchitsa;[637] a poor specimen at Delos;[638] an elaborate, perhaps late, type at Trebenishte.[639] VZ 2·70–2·90 m.

E.216. Pin. L. 0·045 m. Plain loop of wire. W10 under the cobbles.

E.217. Pin head. L. 0·14 m. Another piece. L. 0·18 m. V3 surface. Cf. *Perachora* I 175, pl. 76, 10. Payne's type H.

E.218. Probably a pin head. Cock. Not stratified.

III. Fibulae

E.219. FIG. 36. Stilted safety-pin fibula of twisted bronze wire with a small square plate. Sketched and photographed *in situ,* now disintegrated. No exact parallel. VN 2·30 m.

E.220. Twisted wire and part of plate. VZ 2·00 m.

E.221. Another. VΘ 2·30 m. in black earth.

E.222. Another. VZ 2·95 m.

E.223. Part of a flat catch. V3. Surface.

Beaded Fibula.

I distinguish between mere thickenings, as on the Mouliana fibula and on *Vrokastro*, pl. XX, C, which is found with Protogeometric pottery in a chamber tomb, and definite bead-like lumps, *Vrokastro*, pl. XX, B G J, which are found only in Bone Enclosures with Geometric pottery. A confirmation of the validity of this distinction comes from the Kerameikos, where a transitional type was found in Grave 48 (late).[640] It also suggests that the type in bronze evolved early without the intervention of compound fibulae, which are much later (see below), or real beads.

E.224. PLATE 69. Part of a beaded [641] fibula. L. 0·07 m. H. 0·04 m. Three beads. VN Nucleus 14. 2·15–2·25 m. A simple type, and probably early in the Geometric period, because it is like the transitional fibula in the Kerameikos. It is most like *Vrokastro,* pl. XX, G.[642]

Leech and Boat Fibulae.

Blinkenberg claims these as Italian types,[642a] but they are seen all over Greece, and early stages in Vrokastro are much too early for Italian influence. If they are common in Protocorinthian graves in Sicily, it must be because the colonists brought them, as earlier settlers [643] probably brought stilted and hump-backed fibulae.

Bronze Leech Fibulae.

E.225. PLATE 66. Leech fibula, with short catchplate. V4, 2·05 m.

E.226. PLATE 66. Similar, with long catch-plate [644] and 'eyes' at the side. L. 0·085 m. Incised lines. VN 2·35 m.

Bronze Boat Fibula.

E.227. PLATE 66. L. 0·015 m. Traces of horizontal decoration,[645] lines on the ends. VR 3·05 m. The Perachora fibulae of this shape all seem to have 'eyes'.

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[635] This pin seems to be Payne's orientalising type A, most like *Perachora* I, pl. 74, 13. The disk is thinner and therefore probably a little earlier than Robertson, E.24.

It was labelled by Miss Lorimer as found below the pavement (see *BSA* XXXIII 36), but note the confusion of the stratification, for a complete Protogeometric pilgrim-flask was found higher than the pin.

[636] Fiala, *WMBH* VI 168 at Sanskimost.

[637] Casson, *BSA* XXVI 24 and pl. II.

[638] *Délos* XVIII 276. References are given there to other kinds of pins.

[639] Filow, *Archaische Nekropole* 34. Silver. Dunbabin quotes also gold pins, *AJA* LIV 124, fig. 3 *c*, but we need not accept the description 'hair-pin' or the date there given: a sixth or seventh century date is more likely.

[640] *Kerameikos* IV, pl. 39, M 2. For Mouliana, see *AE* 1904, 30, and see Hall, *Vrokastro.*

[641] *Cf.* Furtwängler, *Aegina*, pl. 115, third row, right. The drawing pl. 116, 21, is not satisfactory.

[642] Unfortunately this has no context.

[642a] *Les Fibules grecques et orientales* 199, nos. 6, 7, 8.

[643] *Cf.* Orsi, *MA* II (1893), pl. II 11, found in tomb 23 (Cozzo Pontano). Note the Mycenaean sword pl. II 18. *Cf.* Blinkenberg, *op. cit.*, fig. 27, I. 12 a, from Kydonia.

[644] Cf. *Perachora* I, pl. 72, 10.

[645] *Cf.* Blinkenberg, *op. cit.*, fig. 164, VII. 3 a.

Scorpion Fibula.[646]

E.228. PLATE 66. Incomplete. L. 0·04 m.

Compound Fibulae.

Many more of these have been found in Greece since Blinkenberg wrote. If they were, as he thought, Italian imports, it is hard to see how they reached Pherai in such quantities.[647] 750–700 B.C.

Bone, amber, and bronze, sometimes iron. These only survive in sketches.

E.229. Two tubular pieces of ivory with amber[648] in the centre, on bronze wire. L. 0·06 m. Clasp missing. VY 2·00 m.

E.230. Similar. Ivory; it had an iron centre. VR 2·17 m.
Fibulae of this type are common at Syracuse. One was found in the Fusco[649] cemetery in a single-burial grave (CLVIII) along with an aryballos which is transitional between globular and ovoid, but the type continued till the middle of the century.

Robertson gave us the choice between putting E.14 and 15 early or late. They are better late, the latest fibulae in Ithaca: not Blinkenberg type II, sub-Mycenaean, which has looser thinner coils, but III. 3 c, *op. cit.* fig. 69, with a coil near the plate. A plain looser type with two coils can be dated to the sixth century by the contents of a slab grave in Macedonia.[650]

IV. ORNAMENTS

Bracelets.

E.231. PLATE 69. Bracelet. D. 0·08 m. Two knobs on the circle, flat spade-like[651] ends. Round section. VN 2·95 m.

E.232. PLATE 69. Another. D. 0·07 m. Knobs after a bevel. Round section. VN 2·20 m.

E.233. Another. D. 0·025 m. Like the last, but a St. Andrew's cross on a rectangular plate before the bevel. It may be a child's bangle. VN 2·15 m.

Rings.

There were more than thirty bronze rings from all parts of the excavation. I have photographed fifteen and listed the rest, but I do not reproduce them here.[652]

Beads.

The whole of my excavation was infested with tiny bronze beads with open ends, and many were preserved from the former excavation. I cleaned fifty and counted three hundred, but there were many more.

E.234. Biconical.[653] L. 0·05 m. Found VH 2·15 m.

E.235. Biconical. L. 0·025 m. Exactly like prehistoric spondulae. See clay bead. Found VH 2·05 m.

E.236. Biconical with a collar. L. 0·025 m. VN 2·10 m.

E.237. Biconical, long. L. 0·035 m. VΘ 2·80 m.

E.238. FIG. 36. Segmented. VΘ Nucleus 12.
There were many smaller beads like this but all fragile.

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[646] Blinkenberg lists this as an Italian type, XI. 4, but he gives quite a long list of finds in Greece, and there is now a silver one, *Perachora* I, pl. 84, 18. The type is also found at Syracuse, *NS* 1895, 149, with a pear-shaped aryballos.

[647] See *Perachora* I 170. See also C. 52, PLATE 64.

[648] Cf. *AO* pl. LXXXII, *a*, *b*, *f*.

[649] Orsi, *NS* 1895, 165. Note the long clasp. *Cf.* also 41, fig. 28 *bis* and fig. 30. Another was found with a vase of the second Bf. style, *ibid.*, 61 ff., tomb CDXXVII.

[650] *BSA* XXIII 21 ff. See also *AO*, pl. XXXIII h, g, where they are unlikely to be sub-Mycenaean. Cf. *WMBH* I 85, fig. 69, from Glasinac.

[651] Cf. *MA* XV, pl. XI 3. Sporadic find on the Esquiline; *cf.* also E.35 (R. pl. 50).

[652] *Cf.* E.38, 39 (R. pl. 50).

[653] See E.93 (R. pl. 50), cf. *Olympia* IV, pl. XXIV 433.

Pendants.

The dog E.197 may be a pendant.[654] Robertson's 'bird-cages' E.89 and 92 were certainly pendants, and the dog's cage ends in the same way. In Hungary [655] some of these pendants are associated with horse-bits.

E.239. PLATE 69. Bird-cage. L. 0·05 m. Nice condition. VZ 2·00 m.

E.240. PLATE 69. Flat plaque. L. 0·088 m. Decorated on both sides. Five open-work zig-zags, divided and surrounded by groups of lines, loop at the end.

E.241. Tall-necked oinochoe. H. 0·012 m. The top was bored but not pierced, and a ring of the right size was found near. W4, 1·90 m.

I have notes of three other similar finds.[656]

Hair Ring.

E.242. Hair ring.[657] D. 0·02 m. Complete, five coils. Wall 21, under stones.

Belts.[658]

E.243. PLATE 69. Several strips. L. 0·15 m., 0·07 m. W. 0·05 m. Divided up into metopes. One fragment ends with a circle in a square; ridges at the edges. There are rivet holes for attachment. It is curved and may have been fixed to a corselet. VN 2·30 m.

E.243*a*. PLATE 69. Another strip. L. 0·15 m. W. 0·05 m. Decorated with punctured circles in diamonds, perhaps for sewing onto leather. Broken edges.

V. Tools

Miniature Double Axes.

Several were found; a handsome pair was found together and sketched *in situ*. They are frail and have not worn well.

E.244. FIG. 36. L. 0·085 m. W. 0·06 m. Nucleus 16, near Wall 28, 3·30–3·50 m.

E.245. FIG. 36.

E.246.[659] L. 0·045 m. W. 0·035 m. W2, outside Wall 21, 1·00 m.

Razor.

E.247. Incomplete. Semicircular.[660]

Reels.

E.248. Reel. L. 0·035 m. The common type: biconical with a stop at the end. Very frequent in the Chauchitsa [661] graves and at Olympia. W3, 1·60 m.

E.249. PLATE 66. Bobbin. L. 0·08 m. Unusually magnificent.[662] The depressions are probably intended to keep the thread from slipping. W4, 2·00 m.

Bronze Mould.

E.250. Oval object. L. 0·025 m. W. 0·02 m. Thickness 0·005 m. Design in deep intaglio, a bull's head above a bird. It might be part of a two-piece mould for making small ornaments, *e.g.* for tripod-cauldrons.[663]

SILVER [664]

F.3. Miniature round aryballos. VN 2·10 m.

F.4, 5. Two broken silver rings. VN 2·10 m.

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[654] See E.97 (R. *ibid.*).

[655] Gallus and Horvath, *Un peuple cavalier préscythique en Hongrie*, pl. II 1, pl. VI 3, pl. XVIII 8. Some of these objects are in the Ashmolean. No doubt these pendants were used in different ways in different places, but Aetos has a large interest in horses.

[656] *Cf.* the silver aryballos F.3.

[657] *Cf.* Furtwängler, *Aegina*, pl. 116, 54 and 69, *Perachora* I, pl. 79, 24, there said to be parts of earrings. Kleobis has coils, no doubt of metal, at the end of his curls. See *FdeD* IV, pls. I and II.

[658] Cf. *Olympia* IV, pl. XIX.

[659] *Cf.* Robertson E.176 (R. pl. 50).

[660] May be of the common Italian type, *MA* XV, pl. XXIV 24.

[661] *BSA* XXVI, pl. IV (Macedonia).

[662] Cf. *Olympia* IV, pl. XXIV 440–53.

[663] On prehistoric bronze moulds, see Coghlan, *Man*, Nov. 1952, no. 245.

[664] See also the bead M.59.

GOLD (EXCLUDING BEADS)[665]

G.5. PLATE 67. Round conical 'hat'[666] with a turned-up rim made of a loop of gold leaf. H. 0·015 m. D. of rim 0·018 m. W5, 1·35 m.

BEADS

(1) POSSIBLY PREHISTORIC

M.1. Clay. PLATE 67. D. 0·02 m. Conical spindle-whorl. Rough ware. VZ 2·50 m.

M.2. Stone. PLATE 67. D. 0·02 m. Conical. Irregularly bored. VS 2·80 m.

(2) HELLENIC

(a) *Glass (or Paste)*

(I) INLAID.

Seventeen were found complete. Only two are in good condition with white and yellow glass inlay. The inlay is generally fugitive, and in several melon-shaped and round beads it is definitely soluble in water. Sometimes the whole bead is soluble. Some of the inlay is friable and resembles amber. It is possible that some of the beads are amber. Fragments of two melon-shaped beads were found, where the core is clearly glass; no doubt these were covered with inlay. Three shapes were found: twelve triangular, three melon-shaped, two round. Four poor specimens were picked up in the sea off Polis.

Triangular.

M.3. PLATE 67. L. 0·023 m. (*i.e.* the greatest length). Two angles inlaid with white, one with yellow. Surface black, interior reddish.

M.4. PLATE 67. L. 0·023 m. White inlay only. V4, 3·20 m.

M.5–12. Similar, mostly from low levels. Two of these, coloured muddy yellow or brown, may not be glass: they are now soluble.

Melon-Shaped.

M.13. PLATE 67. D. 0·02 m. Disintegrating. The inlay may be amber. VR 2·90 m.

M.14–15. Two others similar. VΘ 3·30 m.

Round.

M.16. D. 0·014 m. Two inlaid streaks round the body. V.

M.17. PLATE 67. Round. D. 0·012. This bead may be amber, with an amber inlay. Four circles for inlay, which also may be amber. VZ 2·95 m.

Fragments of a long amber bead, with white inlay, were found.

M.18–19. PLATE 67. Two tiny beads. D. 0·005, 0·006 m. Opaque cobalt blue, excellent condition. They each have three circles depressed on them, as if for inlay. W 2·20 m. and Wall 27.

M.20. PLATE 67. Similar. Two circles for inlay. W7, 1·90 m.

M.21. PLATE 67. Similar. Paler. VF 2·10 m.

M.22. PLATE 67. Dull dark blue. D. 0·006 m. Resembles the fabric of the melon beads; may be intended for inlay. VN 2·50 m.

(II) TRANSPARENT WHITE GLASS.

M.23–29. PLATE 28. } D. 0·008–0·01 m.
M.30–35. Not shown. }

Several of these beads show traces of yellow paint, two are burnt black. All are tubular and fragile: two are friable and may not be glass. They were found from 2–3·30 m. W, VΘ and VF, one in Nucleus 15, and one in Wall 21.

M.36. PLATE 28. White ring. D. 0·008 m. This may be a fragment of another of these beads. V8.

M.37. PLATE 28. Similar to M.36, but rounder and more solid. D. 0·015 m. VN.

M.38. PLATE 28. Similar, but with a greeny shade. D. 0·016 m. VΘ 2·95 m.

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[665] See M.53–58 for gold beads.

[666] Dunbabin compares the silver cone from Perachora, *op. cit.* 184, pl. 84, 13. They may be earrings.

(III) BLUE.

M.39. PLATE 67. Transparent turquoise. D. 0·025 m. Bi-conical. VZ 2·95 m. Mark of cord left in mud in the centre. D. 0·003 m.

M.40. PLATE 67. Opaque, streaky, cobalt. D. 0·018 m. Round. V.

M.41. PLATE 67. Opaque, cobalt. D. 0·012 m. Irregular conical. Wall 28.
See also under inlaid beads.

(IV) YELLOWISH-GREEN.

M.42. PLATE 67. D. 0·013 m. Conical. Damaged, but seems transparent. Fragments of others. VS 2·85 m.

M.43. PLATE 67. D. 0·015 m. Round, transparent. V4, 3·30 m.

M.44. PLATE 67. D. 0·01 m. Similar. W6, 1·80 m.

(V) BLUE-GREEN.

M.45. PLATE 67. D. 0·015 m. Round, transparent. Nucleus 12.

M.46. PLATE 67. Tiny ring. D. 0·006 m. Compare M.36 above. VΘ.

(VI) OPAQUE BLACK.

M.47. PLATE 67. D. 0·015 m. Rather flat. In some lights looks blue. V.

M.48. PLATE 67. D. 0·01 m. Round. Pithos 2. VN.

M.49. PLATE 67. D. 0·018 m. Has three red patches. V.

M.50. PLATE 67. D. 0·012 m. Blackish. W7, 1·90 m.

(*b*) *Crystal*

M.51. PLATE 67. D. 0·015 m. Round, with a small hole. VΘ 2·15 m.

M.52. PLATE 67. D. 0·022 m. Similar. Found south of Wall 27, 1·90 m.
A similar bead was found in the sea off Polis.

(*c*) *Conical Gold-leaf*

M.53. PLATE 67. D. 0·01 m. H. 0·008 m. W 2·40 m.

M.54. PLATE 67. Similar Shrine, 1·47 m.

M.55. PLATE 67. Similar. VN, Pithos 2.

M.56. Similar. Crushed. VN, Pithos 2.

M.57. PLATE 67. Smaller bead. Crushed. V.

M.58. PLATE 67. D. 0·005 m. H. 0·005 m. VΘ 2·15 m.

(*d*) *Thin Silver*

M.59. PLATE 67. Round. D. 0·007 m. Lines are incised on it. Found south of Wall 27.

(*e*) *Cornelian*

These beads are in good condition, and translucent. They were found VN 2·70 m., with B.13.

M.60. PLATE 68. Hexagonal, almond-shaped. L. 0·018 m. W. 0·015 m.

M.61. PLATE 68. Similar. L. 0·015 m. W. 0·012 m.

M.62. PLATE 68. Round. D. 0·008 m.

(*f*) *Yellow Amber*

The condition of nearly all of these is deplorable. The surface is dull and crumbling and cannot be washed.

M.63. PLATE 68. Wedge-shaped bead.[667] L. 0·055 m. H. 0·01 m. Good condition. Flat on one side, round on the other, pierced longitudinally. Wall 21.

The blunt end of another, similarly pierced, was found in another excavation. It was also pierced laterally, perhaps to represent the eyes of a fish.

See also D.28.

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[667] *Cf.* Cumae (text) 90, fig. 37, 12, from Prehellenic tombs.

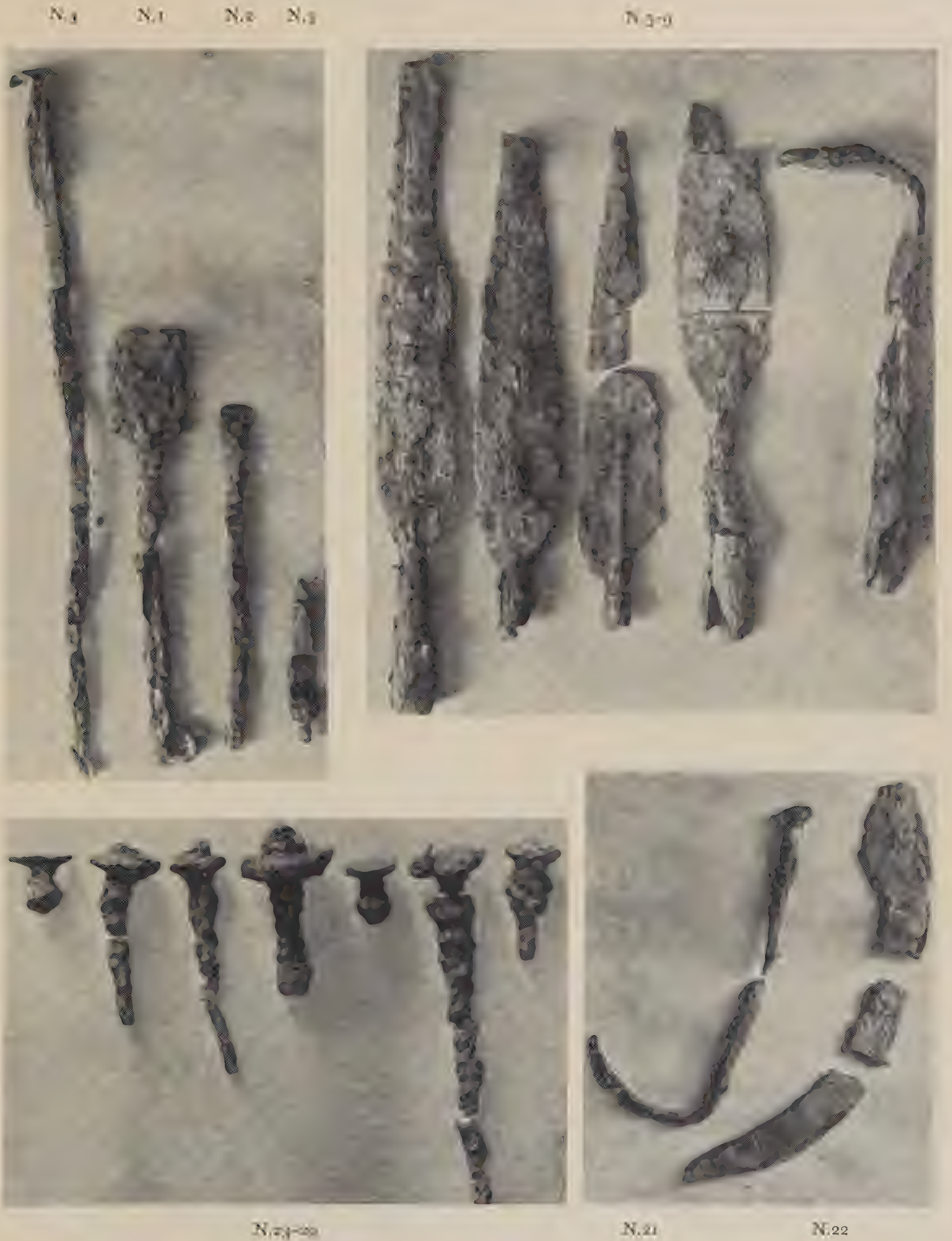
N.4
N.1
N.2
N.3
N.5-9
N.23-29
N.21
N.22

Fig. 35.—Iron Objects.

M.64. End of a broad bead; remaining L. 0·025 m. VN.

M.65. Flat spacer bead, twice pierced. L. 0·02 m., perhaps square. Wall 21.

M.66. Flat, lozenge-shaped. L. 0·017 m. H. 0·004 m.

M.67. Flat, long bead. L. 0·017 m. H. 0·007 m. Wall 30.

M.68. Flat round bead. D. 0·008 m. Wall 27.

M.69, 70, 71. Three similar, found in VΘ 2·95 m. and Nucleus 14.

M.72. Round, with small piercing. D. 0·015 m. W, in Hearth.

M.73. Round, with large piercing. D. 0·015 m. H. 0·005 m. Under oinochoe.

M.74. Similar, but H. 0·008 m. Wall 21.

M.75, 76. Perhaps melon-shaped. Nucleus 12. VΘ 3·00 m.

M.77, 78. Egg-shaped. VN 1·25 m.

M.79. Tubular. D. 0·008 m. VH 2·15 m.

IRON

I. WEAPONS

Hunting Spears or Arrows.

This is a group of weapons with solid shafts, and usually with small blades.

N.1. FIG. 35. Part of blade and shaft. L. 0·195 m. W. 0·035 m. The blade and shaft were found broken but together. As far as I know, the ring or rat-tailed tang can only be paralleled from the bronze age. The blade has square shoulders (like that of socketed bronze spear-heads early in the Archaic period, according to H. Weber),[668] but flat, without a mid-rib. VN 2·50 m.

N.2. FIG. 35. Lower part of an arrow, incomplete below. L. 0·158 m. W. 0·013 m. Square shaft.

N.3. FIG. 35. Top of arrow-head.[669] L. 0·078 m. W. 0·012 m. Central rib. VN 2·10 m.

N.4. FIG. 35. Arrow, complete. L. 0·33 m. W. 0·01 m. Rounded at the end with a nick at the end of the shaft.

Socketed Spear-heads.

N.5. FIG. 35. Spear-head.[670] L. 0·31 m. W. 0·043 m. Tip missing. Broad central rib right down the middle. Compare the example from the Kerameikos mentioned above. VN 2·50 m.

N.6. FIG. 35. Spear-head. L. 0·245 m. W. 0·04 m. Tip and haft missing. Narrower midriff, worse condition. VN 2·30 m.

N.7. FIG. 35. Spear-head. L. 0·245 m. W. 0·04 m. Haft missing, broken. Long pointed lip and prominent though narrow midriff.

N.8. FIG. 35. Spear-head. L. 0·255 m. W. 0·045 m. Three breaks, point missing. Blade looks flat. VN, Nucleus 12.

N.9. FIG. 35. Part of short blade and a long socket. L. 0·23 m. W. 0·035 m. Joins uncertain. Blade flat.

II. UTENSILS

Knives.

There are six hafted knives and three tanged, many are of uncertain type. Mycenaean knives are hafted, the knives at Halos are all tanged. It looks as if the tanged kind is later. A hafted knife was found with the iron spear-head in the Kerameikos.

N.10–20. Knives from VN.

Strigil.

N.21. FIG. 35. Parts of a strigil. Bulb on the end. VN.

Sickle.

N.22. FIG. 35. Parts of a sickle.[671] Marks of three rivets. This is a business tool with a fitted handle. VN 2·13 m.

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[668] *Olympische Forschungen* I 147, pl. 57; iron, *ibid.* 152, pl. 59 *c.*

[669] Cf. *ibid.* 154, pl. 62 *h.*

[670] Cf. *ibid.* pl. 57 *a.*

[671] Cf. *Perachora* I 189, pl. 86, 16–19. See note on currency or token dedications.

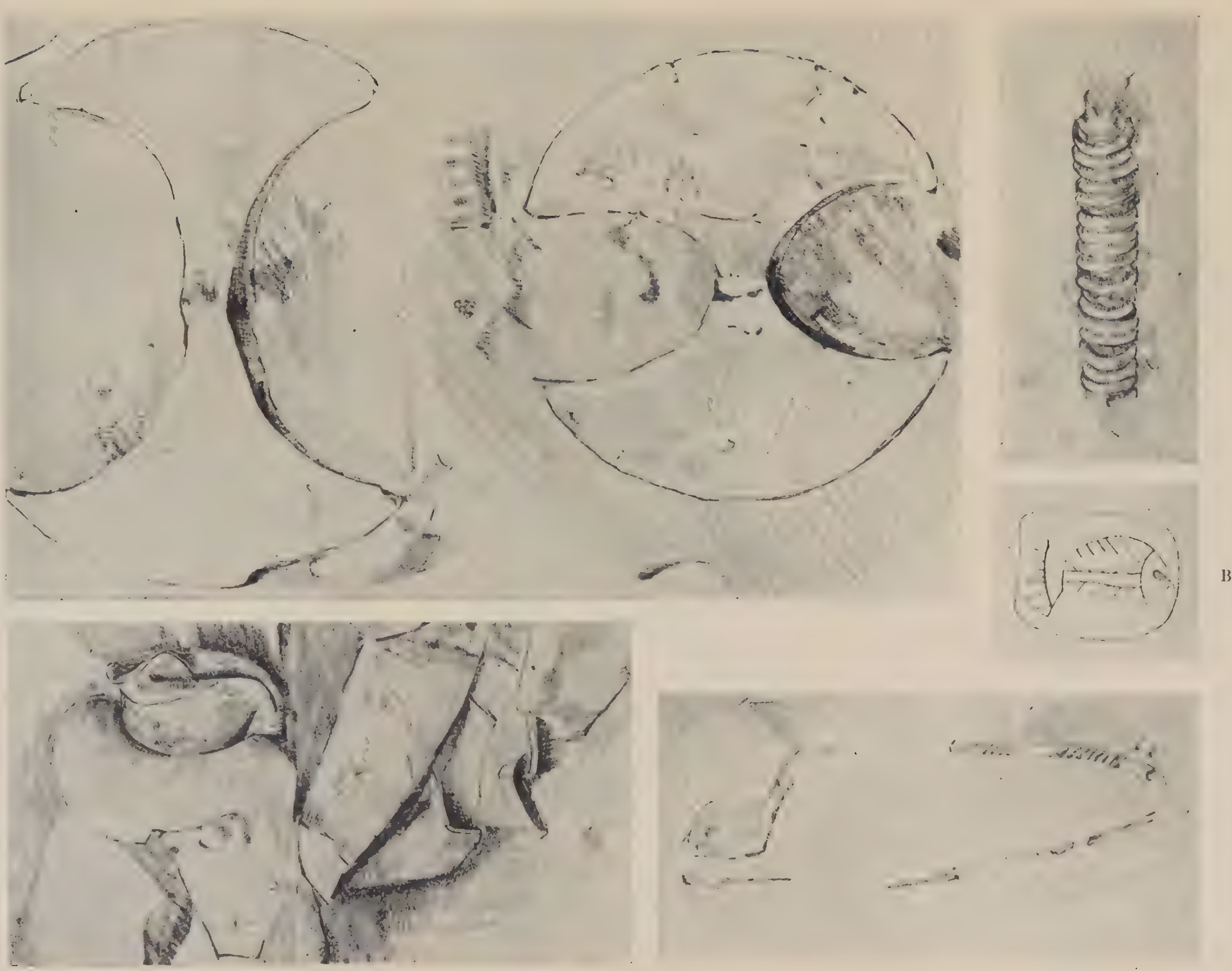
E.244
E.245
E.238
B.13
E.201
E.219

FIG. 36.—BRONZES AND A SEAL. Drawn by N. Bruce (bronzes), A. Petty (seal).

III. JEWELRY

Pins.

N.23–30. FIG. 35. Heads of eight ‘Tam o’ Shanter’ pins found all over the excavation (seven shown).

IV. MISCELLANEOUS

Handle.

N.31. Handle. L. 0·118 m. H. 0·088 m. Four rivet holes on the sides. Perhaps a situla handle.[672] VN 2·60 m.

Rail.

N.32. Three curved pieces of iron. L. 0·40 m. W. 0·033 m. Three holes. Possibly part of a chariot rail. VN 2·30 m.

SYLVIA BENTON.

THE LATER CORINTHIAN POTTERY FROM AETOS

INTRODUCTION

During the autumns of 1948 and 1949 I had the honour of assisting Miss Benton in studying the finds from her excavation at Aetos in Ithaca. She has kindly allowed me to prepare the later Corinthian vases from this excavation for publication. Professor Robertson has already published [673] the vases discovered by Mr. Heurtley; the pieces published below are mainly of interest in showing that Corinthian pottery continued to be used in quantity at Aetos throughout the sixth century. A few figured pieces are illustrated,[674] but as few of the pieces are in good condition, and most belong to well-established types, I have generally referred the reader to some standard work.

I have mentioned a number of pieces which are of no interest in themselves,[675] in order to make the record of different shapes found in Ithaca as complete as possible; these fragments have not been given catalogue numbers.

PROTOCORINTHIAN AND ‘CORINTHIAN’ POTTERY

KOTYLAI

K.1. PLATE 70. Three fragments. Rays at base; animal frieze (goats and feline). The animals were first sketched in outline, then filled in black. No incision. Bad Late Protocorinthian to Early Corinthian.

Fragments of about a dozen Early Corinthian kotylai, similar to W. 263 ff.

K.2. PLATE 70. About one third of the vase. H. 0·125 m. Paint fired dark red; details incised. Vertical wavy lines at rim; wild goat; rays at base. Similar in shape, size, and decoration to W. 338. Poor drawing. Beginning of Middle Corinthian. VN 2·59 m.

K.3. Base, about half of body, and one handle. H. 0·08 m. D. at rim 0·13 m., at foot 0·075 m. Light grey clay. Shape and decoration as *NC* no. 973 (fig. 151). VN 2·50 m.

K.4. Complete except for part of lip and body. H. 0·09 m. D. at rim 0·12 m., at foot 0·06 m. Similar. Nucleus 14.

Besides these there are fragments of at least a hundred sixth-century kotylai,[676] mainly of the type *NC* no. 973, which continues throughout the century.

K.5. Miniature kotyle, complete except for one handle. H. 0·035 m. D. at rim 0·06 m. White clay, badly fired. Decoration similar to *NC* fig. 181*b*, very badly preserved.

There are fragments of other similar kotylai. Payne (*NC* 334) says that these vases are not very common before the middle of the sixth century, and makes particular mention of their use as votive offerings.

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[672] *Cf.* bronze handles, *Perachora* I 164, pl. 69, 10, where reference is made to a situla in New York.

[673] In *BSA* XLIII 9 ff.

[674] The drawings are the work of Miss Audrey Petty: I have to thank Miss Benton for the photographs.

[675] See *Stratification*, p. 258, and also p. 264.

[676] Cf. *NC* 324, for evidence on the dating of these kotylai.

K.6. No illustr. About half of the body; one handle. D. at rim 0·09 m. Light-brown clay. In handle zone alternate red and black buds. Round body, black and purple horizontal bands separated by thin reserved lines. Inside, black glaze. Miniature kotylai with polychrome decoration were found at Rhitsona.[677]

LIDS

Flat with Inset Rim

K.7. FIG. 37. About three-quarters of lid, knob lost. D. 0·10 m. Purple and black decoration, very badly worn. Details incised. Running goose between griffin and sphinx; duck; seated lion. Filling ornament, dot and ring rosettes. The original composition perhaps showed two pairs of heraldically opposed monsters with birds between them, separated by two more birds. Early Corinthian. The quarter with the bird and the lion is probably R. 124. Nucleus 15.

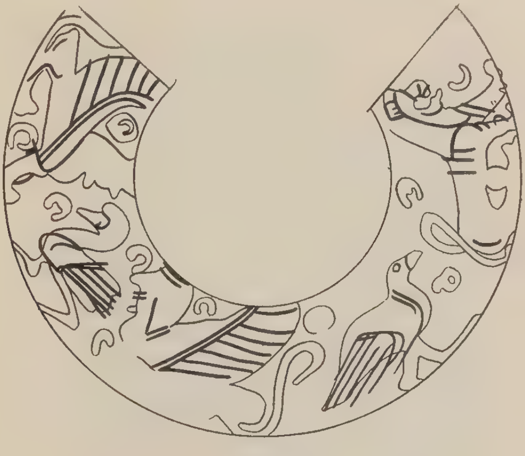

FIG. 37.—'CORINTHIAN' LID K.7.

KOTHONS

K.8. Complete except for handle and part of lip. H. 0·05 m. D. 0·14 m. Light brown clay. Decoration similar to no. 16 from Grave 5 at Rhitsona.[678] Middle of sixth century.

K.9. Complete except for part of lip and handle and breaks in body. H. 0·055 m. D. 0·16 m. Late Corinthian White Style. Similar to *NC* no. 1519, except for minor variations in decoration. Second half of sixth century.

OINOCHOAI

Normal Trefoil-mouthed

Several fragments of Late Protocorinthian–Transitional oinochoai: the scheme (scale pattern on the shoulder, then a single narrow frieze, then plain black below) is that of R. 146–9.

K.10. PLATE 70. Two fragments. Fine fabric and good drawing. Details incised. Animal frieze (bull, horseman, panther) with scale ornament above. The scale ornament of this and the following fragment resembles that of R. 148. Late Protocorinthian–Transitional. Nucleus A 15, 3·40 m. Leiden Painter (cf. *Perachora* II 1125) (Dunbabin).

K.11. FIG. 38. Fragment. Style very similar to K.10 but not from the same vase. Very badly worn. Bird between confronted sphinxes. To right, hindquarters of bull. For a similar scene from Ithaca, and references to others, see R. 150. Probably Confronted Griffins Painter (cf. *Perachora* II 240).

K.12. PLATE 70. The only available photograph of a piece lost during World War II. Geese and polychrome dot rosettes; above, scale ornament. Leiden Painter, as R. 148 (Dunbabin).

K.13. FIG. 39. About one-half of a vase lacking handle. H. 0·13 m. Light brown clay. Neck, shoulder and base dark purple. Traces of black glaze, very badly worn, on body. Double incised lines on shoulder. The squat body and widely splayed foot resemble *NC* fig. 10 *g*. Rather later than W. 228, which it somewhat resembles. Middle Corinthian.

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[677] Ure, *Sixth and Fifth Century Pottery from Rhitsona* 23. Our example is larger than the vases in Ure's Class IIA, but may be contemporary with them.

[678] *JHS* XXXI 75, fig. 4, 75. Cf. *AE* 1912, 117.

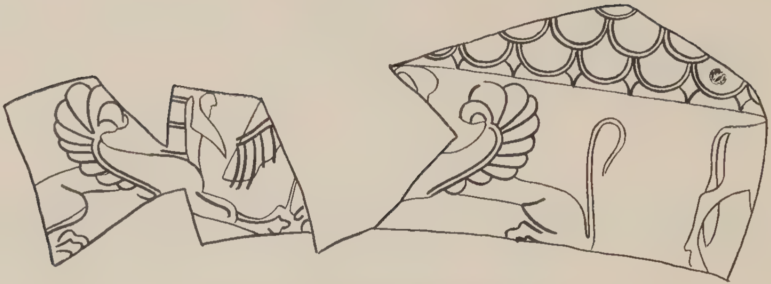

Fig. 38.—LPC/Trans. Oinochoe K.11.

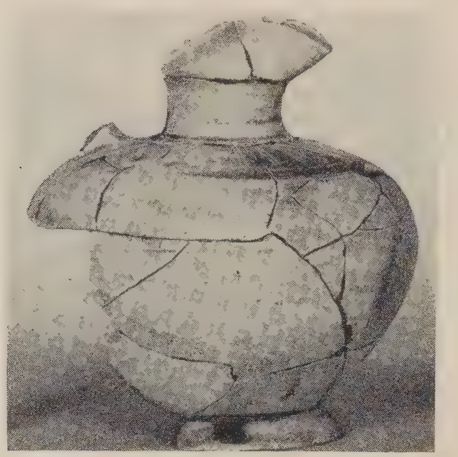

Fig. 39.—'Corinthian' Oinochoe K.13.

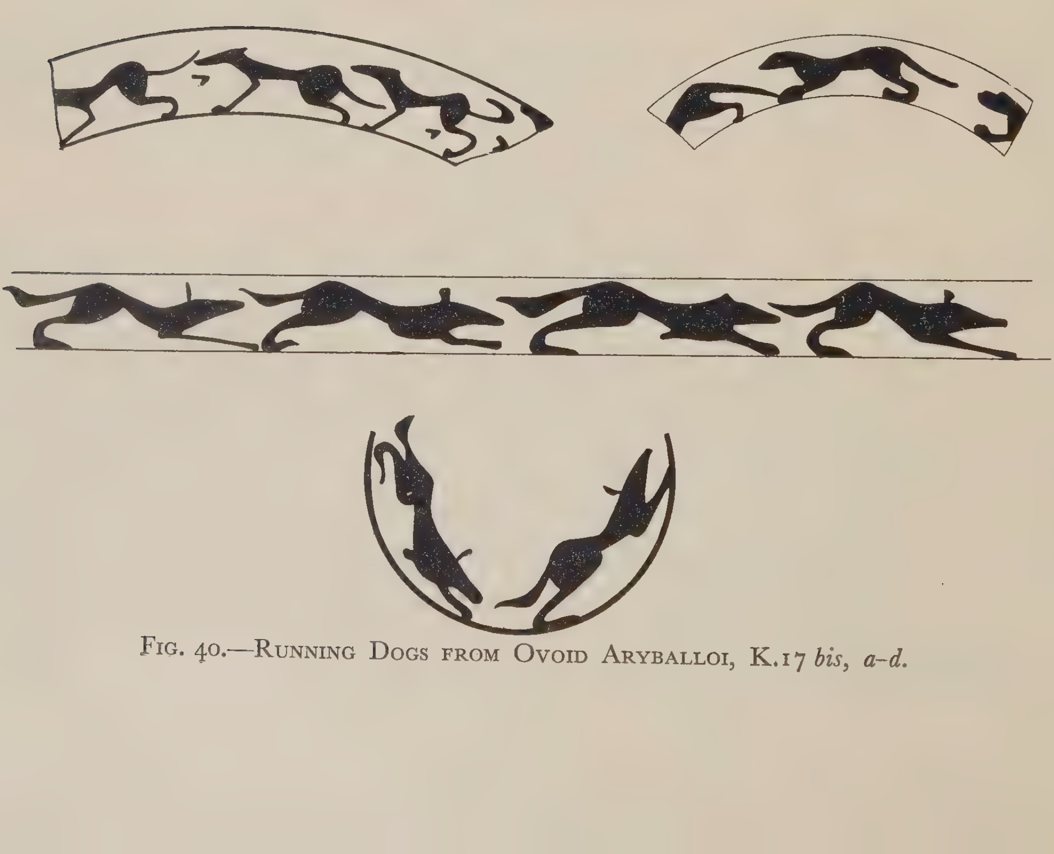

Fig. 40.—Running Dogs from Ovoid Aryballoi, K.17 *bis*, *a–d*.

Broad-bottomed Oinochoai

Fragments from at least two broad-bottomed oinochoai. *Cf.* W. 198. Early Corinthian.

Conical Oinochoai

K.14. Body of large conical oinochoe.[679] Base lost. Badly worn black glaze. Incised leaves on neck; round middle of body carefully drawn chequer pattern. Early Corinthian.

K.15. About one third of base and body. D. of base 0·14 m. Light-brown clay. Black glaze well preserved. At base, short black rays. *Cf.* W. 200. Early Corinthian. Nucleus 15.

K.16. Body of another similar. D. of base 0·12 m. Glaze almost entirely lost. VN 2·30 m.

K.17. Neck and mouth. H. 0·095 m. Black glaze much worn. VN 2·50 m.

Round-mouthed and Olpai

Fragments of several necks and handles.

ARYBALLOI

Ovoid

K.17 bis, a–d. FIG. 40. Fragments of at least four small ovoid aryballoi decorated with running dogs[680] in silhouette style.

Round

K.18. PLATE 70. This piece was lost during World War II, and no other photographs are available. Animal frieze between bounding lines top and bottom. In front (opposite the handle) two geese confronted; between them an incised rosette. Behind the left-hand goose, a bird flying to the right. Under the handle, a goat walking to the right; tongues on shoulder and base. Incision is used for the pinions and tail feathers, but in a completely mechanical way without any feeling for the shape of a bird's wing. Possibly not Corinthian. It is not likely to be Etruscan. 'Probably Italiote' (Miss Benton).

K.19. Complete except for greater part of mouth. H. 0·06 m. Quatrefoil ornament like *NC* fig. 54 E. Late Corinthian. VS 3·15 m.

There are fragments of about five other round aryballoi and numerous fragments of piriform aryballoi with scale decoration, like *VS* pl. 42, nos. 1 and 2 or *NC* fig. 8 A.

ALABASTRA

K.20. Part of neck and body lost. H. 0·08 m. Linear decoration similar to *NC* fig. 121 B. Early Corinthian.

K. 21. Mouth, neck, handle, and part of body of small alabastron. Reddish clay. Birds and dot and circle rosettes; details incised. Early Corinthian. Nucleus 16.

K.22. Part of body. Reddish clay. Panther, bird (wing only preserved), incised rosettes. Early Corinthian.

Fragments of at least six others.

PHIALE MESOMPHALOS (MINIATURE)

K.23. Complete. D. 0·055 m. Light-brown clay. Red on white decoration; the omphalos red; round it two red bands; outside these, short red tongues. Late Corinthian. VN 2·10 m.

J. ANDERSON.

Note.—The effect of the earthquakes of 1953. After the earthquakes in August 1953 the contents of both museums in Ithaca had to be evacuated. While the vases at Stavros were little damaged, many vases at Vathy were broken, and it is impossible to say how many of these can be repaired. The labelled cases of sherds in the basement had to be jettisoned, along with many partially restored vases, which had not been exhibited. A more serious loss was all the vases and sherds in case III, which was crushed by the fall of a wall: *viz.* all the kotylai 666–706, R. 17–40, R. 293–304; the later kantharoi 727–773, R. 305–337 (R. 331 escaped), R. 352–358: some nice linear oinochoai 924–6, 948.

SYLVIA BENTON.

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[679] *Cf.* 1022 and W. 200.

[680] *Cf.* 705, FIG. 10 above.

INDEX

I. GENERAL INDEX

abaton, Mycenae 26
Aegisthus, burial at Mycenae 5; 'Tomb of', Mycenae 3–18 *passim.*
Aetos, Argive (?) pottery 287; bulbous pins 267; Corinthian geometric 260–263; Corinthian orientalising 263–265; early shrine 259–260; further excavations 255 ff.; geometric pottery 271 ff.; and Italian geometric pottery 264; Ithacan pottery 265–266; late pottery 266; Mycenaean pottery 267; non-Corinthian pottery 286 ff.; orientalising pottery 274 ff.; post-archaic dedications 258–259; Protogeometric pottery 267–270; red technique pottery 295; stratification 255–260.
Agamemnon, cult 33
Aigina, and Corinthianising pottery 274; Protocorinthian from 172.
amber 69, 72, 79; (Ithaca) 347, 354.
amethyst 69.
Ammótopos (Epirus), Hellenic houses 135–140.
amulet, stone (L.N./E.M., Knossos) 132.
anasaximon (mine) 201–254 *passim*, 231–239.
Anatolia, influence on Neolithic Crete 134.
Anderson, J. K., *Excavations near Mamousia in Achaia* 154–171; *Later Corinthian Pottery from Aetos* 358–361.
Andronikos II Palaiologos 144 ff.
Argive figurines 62–64; archaic pottery 81; archaic glazed pottery 42–48; archaic miniature pottery 48–50; black-figure pottery 57–58; geometric pottery 34–40, 80.
Argive pottery, added white 36; chronology 38, 40, 44, 57; colour of clay 36; decoration 34.
arms, bronze (Ithaca) 340.
arula, from Ithaca 345–346.
aspirate, closed 27; varying use 27–28.
Attic red-figure pottery 58.

Barrel-vault, transverse 146.
bathroom (Hellenistic house) 156–157.
beads, amethyst 69; ivory 347; from Ithaca 351, 353–356.
Benton, S., *Further Excavations at Aetos* 255 ff.
Bergregal 205 ff., 227 ff.
black-glazed pottery 26, 32, 58–60.
boar's tusk 72, 78.
boundaries, of mines 219 ff.
boundary stones 27–29.
bronze, javelin 78–79; vases (Ithaca) 341.
bronzes, from Aetos (Ithaca) 338 ff., 348–349; Mamousia (Achaia) 164 ff.; Mycenaean hoard 7.
bulbous pins, Aetos 267.
Byzantine signatures (music) 182–190.

Caduceus, ivory 8.
cake stamps (clay) 163–164, 168–171.
cavalry, in Mycenaean times 86–87.
chariot figurines 86.
'Chariot Tablets', Knossos 88.
chariot vase (Mycenaean) 6.
chariots, at Knossos 88; replacement by cavalry 92; use of 91–92, 93.
Chauchitsa, 'amulets' 265, 340–341.
clamps, T- 22.
clay plaster 23, 25.
clubs, oligarchic 198.
Clytemnestra, burial at Mycenae 5; 'Tomb of', Mycenae 3–18 *passim.*
cockle shells (bronze) 165–167.
Constantine IV Pogonatos 141, 144.
Cook, J. M., *Mycenae, The Agamemnoneion* 30–68.
cooking pots (Mamousia) 163.
Corinthian influence in Ithaca 261–262; geometric, from Aetos 255 ff.; pottery 50–57, 80; later, from Aetos 258–361; red-figure pottery 58.
Corinthians, and Aetos 257; arrival in Ithaca 259.
Crete, and Ithaca 265; neolithic culture, origins 134
cup-handle (Vaphio type) 9.

Demeter (?), on cake stamp 171.
dinos attachments (Ithaca) 340–341.
Dipalitsa, *see* Molyvdoskepastos.
domes, in N. Greece and Serbia 145–146, 151.
Dunbabin, T. J. (and M. Robertson), *Some Protocorinthian Vase-painters* 172–181.

East Greece and Ithaca 265.
East Greek pottery (Ithaca) 335.
Epano Phournos (Mycenae) 69–83; tomb construction 81–83.
Ephyraean cups 8.
ergasimon (mine) 201–254 *passim*, 231–239.
ergasterion 203–205.

Fibulae, Ithaca 346, 350–351.
figurines, Argive 62–64; Helladic 24; ivory (Aetos, Ithaca) 347; Mycenaean 86; neolithic (Knossos) 132–133; terracotta 33, 73; warrior 71.
fish-plates 191–192.
fountain house, Hellenistic 29; at Mycenae 19–29.
frescoes, at Molyvdoskepastos 144, 147; Mycenaean figured 14; Mycenaean outline 12.
Furness, A., *The Neolithic Pottery of Knossos* 94–134.

Gold, earrings (Hellenistic) 9; inlay with *niello* 9; leaf and sequins 8, 78.
goose-head handle 164–165.
griffin protomes 340–341.
griffins, ivory relief 8.

Hammond, N. G. L., *Hellenic Houses at Ammótopos in Epirus* 135–140.
heating, for oil pithoi 12.
Helladic pottery, Early 7; Middle 24, 73; Late 7, 13–14, 16–17, 18, 23–25, 68 (Palace Style), 72 ff., 86, 267 (from Aetos).
Hellenistic paving 32; pottery 26–27; 158–163 (Mamousia); tiles 32; tombs, Mycenae 9.

Hera, sanctuary (Mycenae) 19–29 *passim.*
Heraia (Hera) 28.
Holland, Marian, *see* Mycenae, Perseia Fountain.
Hood, M. S. F., *A Mycenaean Cavalryman* 84–93; see also Mycenae, Epano Phournos 69; Perseia Fountain 22.
Hopper, R. J., *The Attic Silver Mines in the Fourth Century* 200–254.
horoi, boundary and mortgage stones 212 ff.
horse, domestication 90–91; figurines 89–90; introduction into Greece 91.
horseman, terracotta 84–93.
houses, Hellenic at Ammótopos (Epirus) 135–140; late Hellenistic (Mamousia, Achaia) 154 ff.

Ingots, Mycenaean 7.
inscriptions, cult 64–66; on Mycenaean vase 6.
iron, objects (Aetos, Ithaca) 343–345, 356–358.
Ithaca, Corinthian influence (early) 261–262; and Crete 265; dinoi and Britain 265; and East Greece 265; and Pelynt sword-hilt 268; red technique pottery 265–266.
ivories, Mycenae 8; objects (Aetos, Ithaca) 338, 346–347; plaque 14.

Joist-sockets (Hellenic houses) 138.

Kainotomia (mine) 201–254 *passim*, 231–239.
Kantharoi, Argive 44.
Keryneia (Achaia), site of 154.
Knossos, neolithic pottery 94–134; neolithic stratigraphy 95–102.
knucklebone, bronze 167.
Koumaro Cave, neolithic jars 121.
Koumsádhes (Epirus), *see* Ammótopos 135–140.

Laconian pottery (Ithaca) 336.
ladder-sockets (in houses) 138–139.
lagynos 9.
lamps, classical 26; Hellenistic 162–163.
Laurion, district 208; silver mines 200–254 *passim*; state domain at 228–229.
lead plate 79; votive 71.
leases, of mines 200–239 *passim.*
loopholes (in Hellenic houses) 136 ff.
louteria 33.
lydion 60.

Mamousia (Achaia), excavations 154–171.
Martyria 182.
‘Megarian’ bowls 9, 27, 160.
‘Melian’ pottery (Ithaca) 336.
Melissópetra 141.
metallon 200–209.
mines (Attic), and agriculture 250 ff.; boundaries 219 ff.; employment of capital in 248 ff.; frequency of payments for 237–239; importance to Athenian economy 247 ff.; at Laurion 200–254 *passim*; law of 223–224; length of lease 226 ff., 237; organisation 200–239 *passim*; pillars in 222–223; prices for 234–237; prosopography 239–246; sale of 205 ff.; status 205–209; tenure and payments 224–239.
mining, unlawful 222.
Minoe, Delos 20.
modes, Byzantine (music) 182–190.
Molyvdoskepastos (Epirus), churches at 141–153.
mould, stone 15.
mud-brick 24.
Mycenae, Agamemnoneion 30–68; Argive pottery at 36–50; bronze hoard 7; chariots and cavalry at 88; clay deposits 17–18; Cyclopean Terrace Building 4, 15–16; Hellenistic 22; Hellenistic Gymnasium (*see* Perseia Fountain House); Hellenistic tombs 9; House of Oil Merchant 4, 9–15; House of Shields 9, 12; House of Sphinxes 14; House of Stirrup Jars 9–15; House of the Wine Merchant 16–17; inscribed tablets 4; Middle Helladic graves 7; Middle Helladic Grave Circle 4, 5; Middle Helladic settlement 25; neolithic pottery 7; North Megaron 16–17; Perseia Fountain House 5, 19–29; Petsas’ House 4; Poros Wall 5–7; pottery imports 34; pottery manufacture 18; Prehistoric Cemetery 5, 7–9; Protocorinthian and Corinthian ware 50–57; residential quarters 4; road to Lion Gate 5; Roman (period) occupation 17; Tomb of Aegisthus, 3–18 *passim*; ‘Tomb of Clytemnestra’ 3–18 *passim*; Cyclopean Tomb 83; Epano Phournos 69–83; Lion Tomb 3–18 *passim*; Tsekouras Site 17–18.
Mycenaean script (Linear B) 6.

Near East, cavalry in 87.
neolithic pottery (Knossos) 126–132; Early 103–120; Middle 120–126; Late 126–132; distribution of 101–102; patterns (symbolic) 120; Phaistos parallels 105; stratigraphy (Knossos) 95–102.
neolithic pottery (Mycenae) 7.
Neromana spring 20.
neumes 182 ff.
Nicol, D., *The Churches of Molyvdoskepastos* 141–153.
niello, inlay with gold 9.

pastas 138.
patera-handles 164–165.
patterns, symbolic (neolithic) 120.
pebble paving 72.
Peisistratus, and Laurion mines 208.
Pelynt sword-hilt, and Ithaca 268.
Perseia Fountain House 19–29.
Perseus 19.
pins, bronze (Ithaca) 343, 349 ff.
pithoi, storage 12, 16; supports for 12, 16.
plaque, Argive 62; ivory 8.
plastic decoration (neolithic), Anatolian parallels 114.
Pogoniani (archbishopric) 141 ff.
poletai, and mine leases 200–239 *passim.*
Poros Wall, Mycenae 5–7.
probouloi (at Athens) 196–7.
Prosymna, terracotta cavalryman 86.
Protocorinthian ‘big style’ painting 172; painters 174–181; pottery (Aigina) 172; pottery (Mycenae) 50–51; pottery (Perachora) 173.
protogeometric pottery (Aetos) 255 ff., 267–270.
protome bowls 47–48.

‘Rainbow’ neolithic 109–110.
ram’s head handle 165.
red-figure pottery 26, Attic and Corinthian 58.
rho, tailed 27.
riding (horse and ass), in Near East 88–89.
ring vases (Ithaca) 329.
Robertson, M. (and T. J. Dunbabin), *Some Protocorinthian Vase-painters* 172–181.
roof-tiles, Hellenistic 22.

Seals, for stirrup jars 13, 17; ivory (Aetos, Ithaca) 346; stone 346.
secondary interment, Mycenae 7.
Serbian church architecture 146.
'shaft graves' (Middle Helladic) 25.
shields, ivory 8, 12.
signatures, musical (Byzantine) 182–183.
signet impressions, on stirrup jars 13.
silver, cup-handle 9; mines at Laurion 200–254 *passim.*
Spata, terracottas from 86.
sphinx, ivory 14.
Stathatou Coll., terracottas 86.
steatite vessel, Knossos 132.
stirrup jars, sealings of 17.
stone, bowls (serpentine) 7, 12; mould 15.
stratification, at Aetos 255–260.
stratigraphy, neolithic (Knossos) 95–102.
symbolic patterns, neolithic 120.
Syracuse, kraters and Ithacan parallels 286–287, 295.

Tablets, inscribed (Linear B) 4, 13.
tear bottles 9.
terracotta, altar (Ithaca) 345–346; horseman 84–93.
terracottas, Ithaca (Aetos) 258; neolithic (Knossos) 133.
terremare axe mould 15.
Thera, geometric pottery 265.
tholos tombs, blocking walls 82; floors 82.
Thrasymon mine district 208–209.
tiles, archaic 66; Corinthian 26; Hellenistic 66; inscribed 33, 66.
Tillyard, H. J. W., *The Byzantine Modes in the Twelfth Century* 182–190.
tools, Mycenaean 7.
torch-holders (rhytons) from Ithaka 328.
Triptolemos (?), on cake stamp 170–171.

'Variegated stone' pattern (Late Helladic) 75.
vases, bronze (Ithaka) 341, 349.

Wace, A. J. B. Mycenae. *Preliminary Report on the Excavations of 1952* 3–18; also 19, 29 69, 81.
'West Slope' ware 32, 81, 160.
windows, in Hellenic houses 136, 139.
winged axe, mould for 15.
wood, Middle Helladic house foundations 25; in Mycenaean house construction 12.
Woodhead, A. G., *A Political Sherd* 191–199. See also Mycenae, Perseia Fountain House 27.
Woodhouse sword, and Ithaca 268.

Zoomorphic lugs, neolithic 131.

II. INDEX OF GREEK WORDS

ἀνασάττειν 203.
ἀπόμοιρα 224.
ἀπονομή 224.

διαγραφαί 210 ff., 219.

ἔδαφος 218.
ἐντός 220 f.

ἐπικατατέμνειν 201, 220.
ἐπικατατομή 201.

καταβολή 206, 224, 226, 230.
κατατομή 201.
κεγχρεών 204

μερίς 204, 225.
μεσοκρινής 222.
μέτρον 220 f.

ὅρμος 223.

συγκεχωρημένα 201–203.
συγκεχωσμένα 201–203.

III. INDEX OF CLASSICAL AUTHORS

Aeschines I 101: 205.
Aristotle, 'Αθπολ. 47, 2–4: 201 ff., 206, 207, 210, 224, 226.
(Demosthenes) X 37–8: 239; Demosthenes XXIV 93, 98: 226; XXXVII: 201, 204 ff., 220, 224; XL 52: 207, 213, 225; (Demosthenes) XLII: 205, 207, 224–5.
Harpocration *s.v.* 'ἀπονομή' 230; *s.v.* 'ὁμοερκές' 223.
Hypereides IV (III) 34–36: 206, 207, 213, 220, 225.
Isaeus III 22: 205.
Lex. Seg. 205, 286, 315: 222–3.
Livy XLV 34, 6: 136.
Pausanias II 16, 5–7: 19, 33; VII 25, 5 ff.: 168 nn. 44, 45.
Plutarch, *Mor.* 843 D: 222.
Strabo III 2, 9: 252.
Xenophon, *Vect.* IV 10: 247; 12: 246; 19: 248; 28: 251.

IV. MUSEUM INDEX

Amsterdam inv. 2082: 179.
Athens, Agora C. 8–12, 13–16, 19–21: 280.
Berlin 1138: 180; 3409: 174; 3773: 179; inv. 2686: 179; inv. 3258: 181; inv. 3318: 176; inv. 3319: 176.
Bonn inv. 1669: 179.
Boston 95.10: 179; 95.11: 178; 95.12: 176; 99.511: 179; 99.512: 178; 03.810: 173.
Brussels A2: 174; A 2097: 176.
Cambridge, Museum of Class. Arch. CAM 257: 191–2.
Corinth C. 31.316: 178; C. 32.139: 178; C. 36.565: 174; C. 40.362: 174.
Eleusis 782: 181; 786: 173.
Florence 79249: 177.
London B.M. A 1008: 177; A 1009: 179; A 1052: 176; A 1345: 177; A 1530: 177; 60.4–4.16: 179; 89.4–18.1: 179; 94.7–18.2: 179; 1907.12–1.789: 178; 1912.6–26.170: 174; 1912.6–26.182: 181.
Munich 227: 177; 228: 177; 6561: 174.
Oxford 1929.362: 181; 1935.41: 175.
Paris, Louvre CA 617: 176; CA 931: 178; CA 1831: 179.
Rome, Vatican 80: 180.
Rome, Villa Giulia 21126: 180; 50484: 180.
Taranto 4173: 179.

V. EPIGRAPHICAL INDEX

IG IV 493: 19.
IG I^2 325–34: 210.
IG II^2 411: 207–208; 1579, 1580, 1581: 210; 1582: 208 ff.; 1582–9: 210 ff.; 1596: 212, 219; 2491: 222; 2634: 218; 2635: 218; 2636: 212, 218, 219; 2637: 219; 2638: 212, 219; 2653: 212–13; 2714: 219; 2747: 212, 219; 2748: 219; 2750: 219.
SEG X, nos. 237–42: 210.

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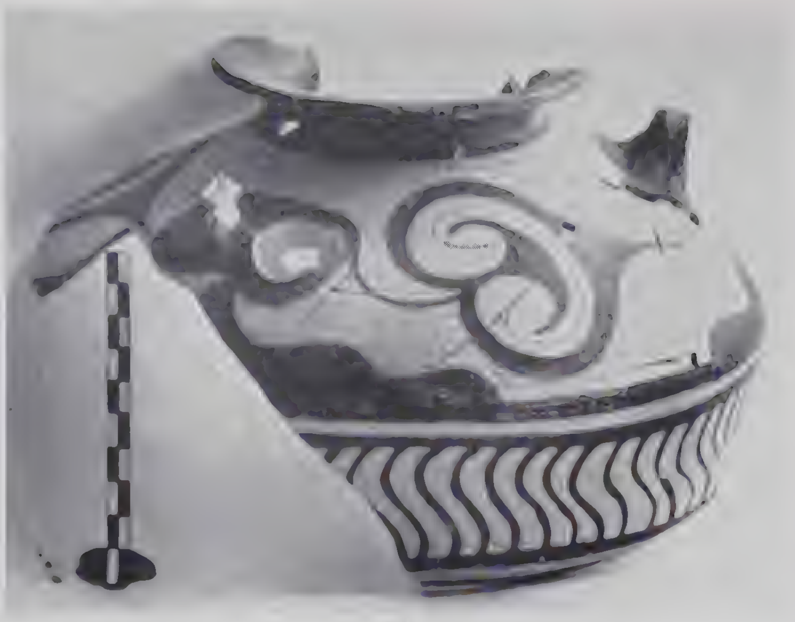
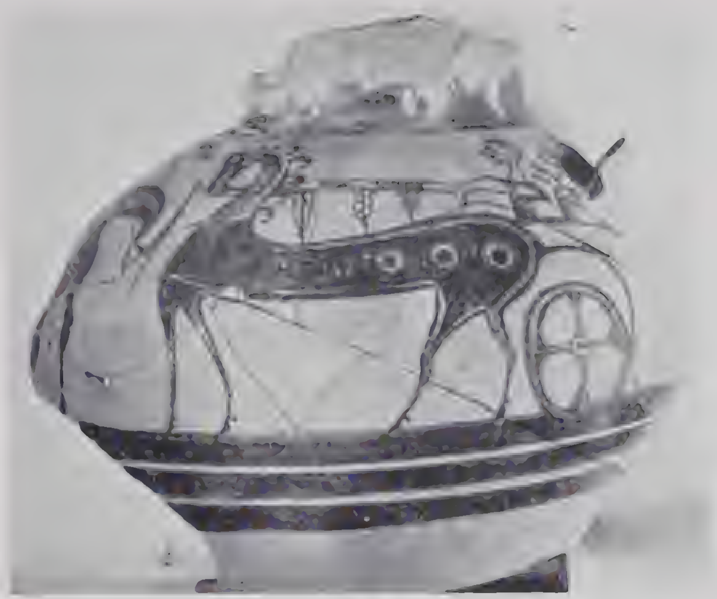
Bungay, Suffolk.

PLATES


(a)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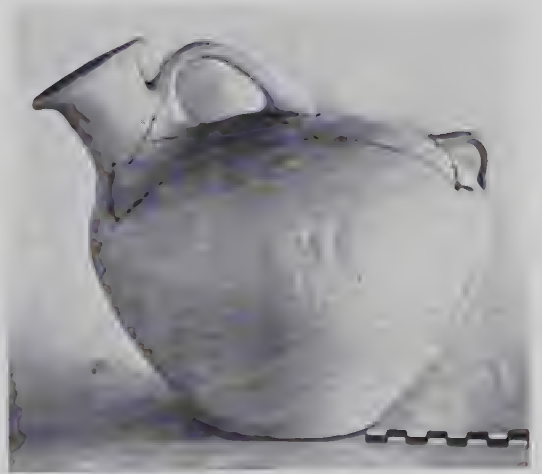
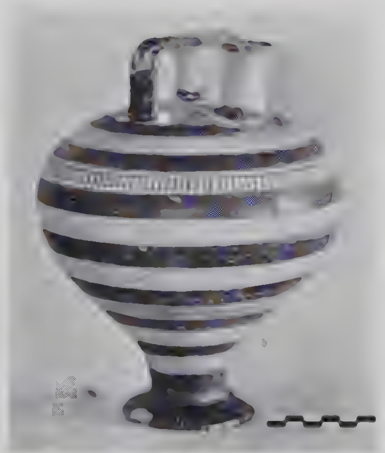

(c)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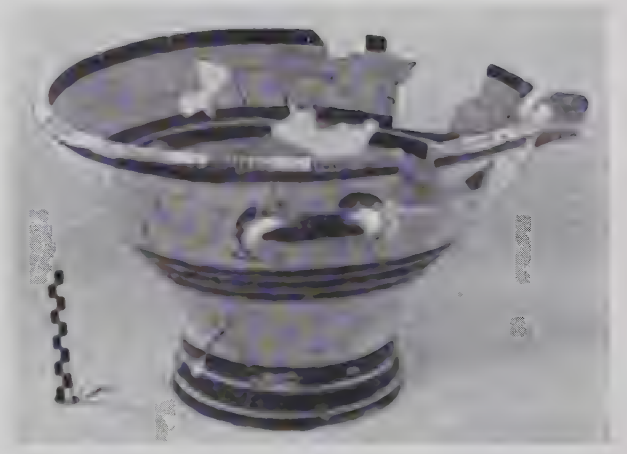
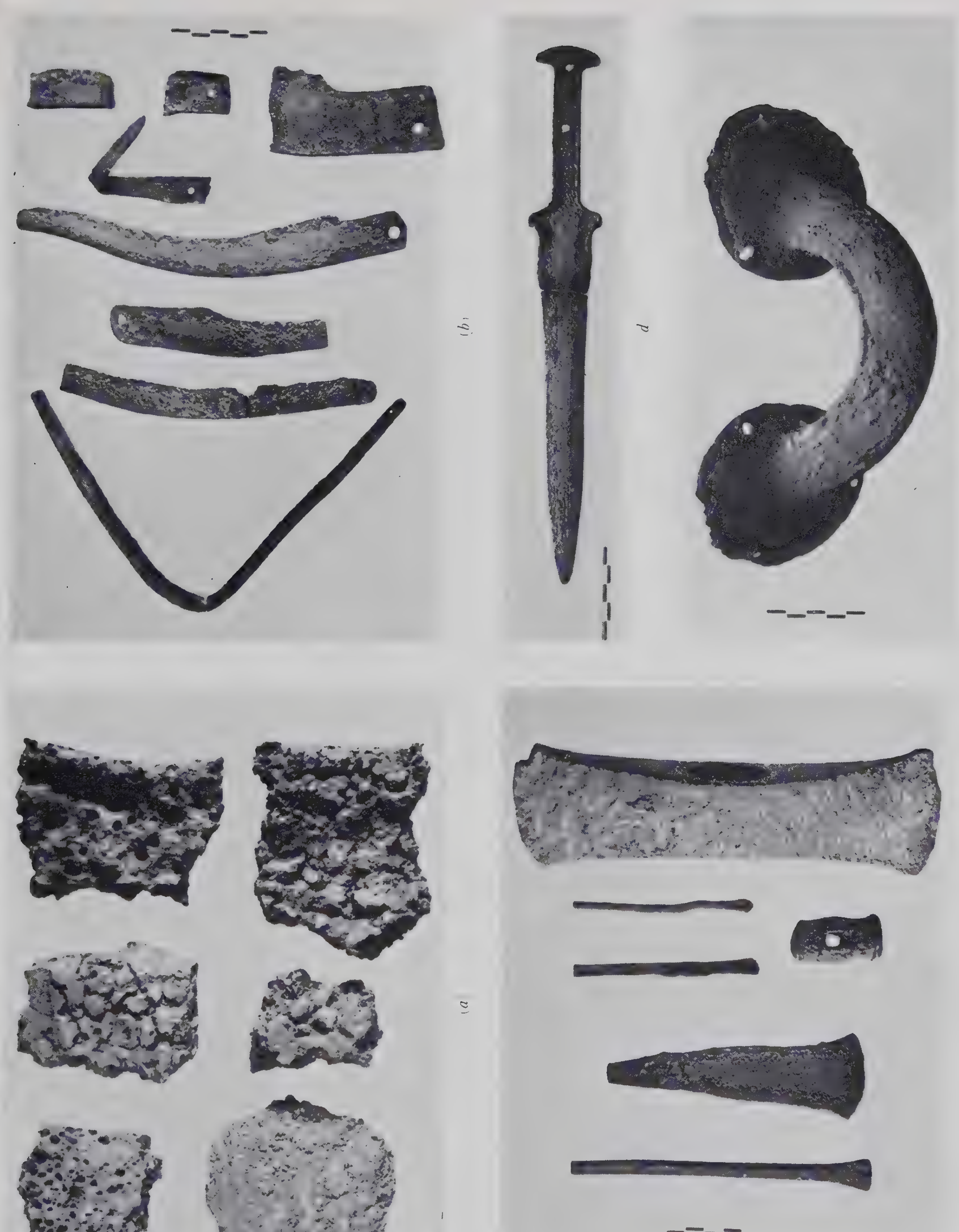

(e)

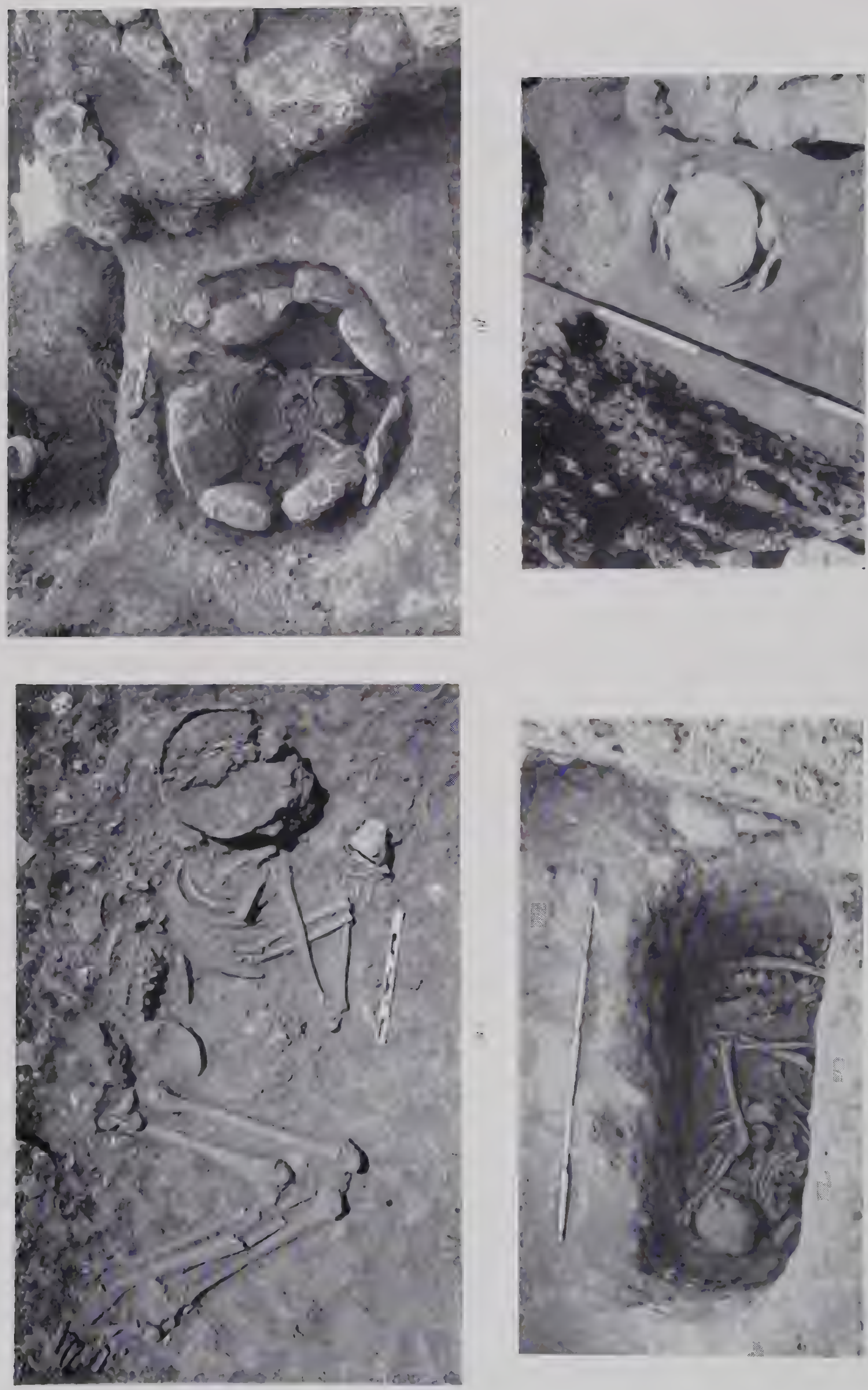
MYCENAE.

PREHISTORIC CEMETERY. (*a*) Alabastron L.H. II.
POROS WALL. (*b*) Chariot Vase. L.H IIIA (Scale about 1 [illegible] (*c*) Askos L.H. IIIB. (*d*) Stirrup Jar L.H. IIIB.
HOUSE OF OIL MERCHANT. (*e*) Spouted Bowl L.H. IIIB.



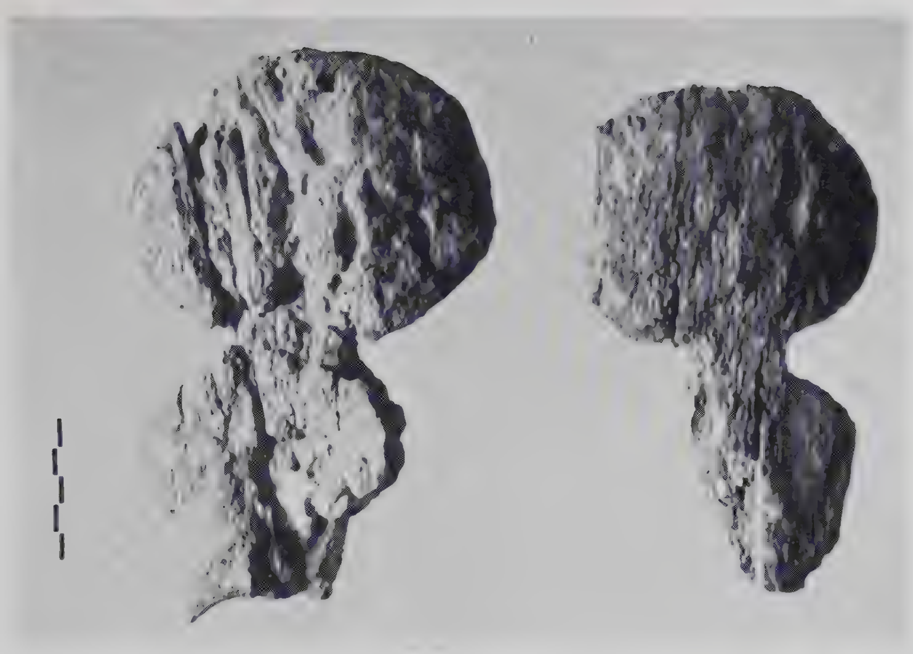
MYCENAE: POROS WALL, GROUP OF BRONZES.

(*a*) Ingot Fragments and Lump of Melted Metal. (*b*) Knives. (*c*) Chisels, Adze, Hammer, Drill, Double Axe. (*d*) Dagger. (*e*) Handle of Cauldron.

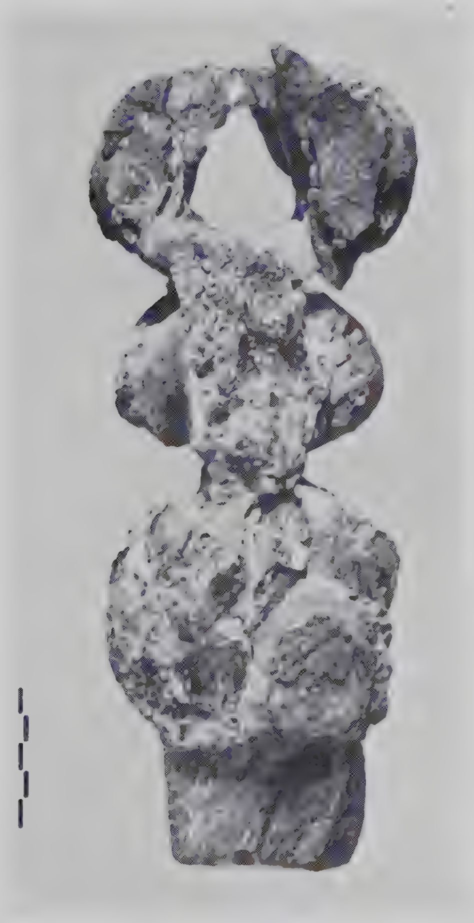


MYCENAE: PREHISTORIC CEMETERY.

(*a*) GRAVE XXV. (*b*) GRAVE XXVII. (*c*) GRAVE XXVIII, BEFORE OPENING. (*d*) GRAVE XXVIII, OPEN.



(a)



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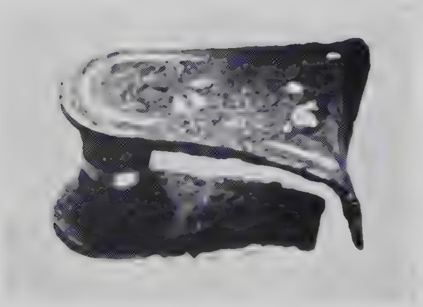
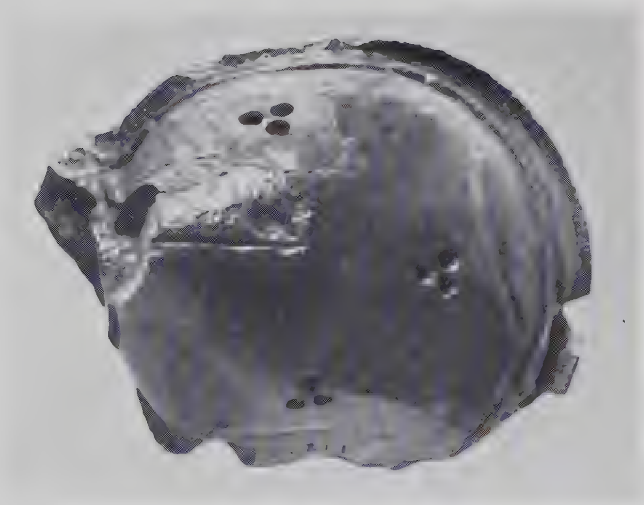


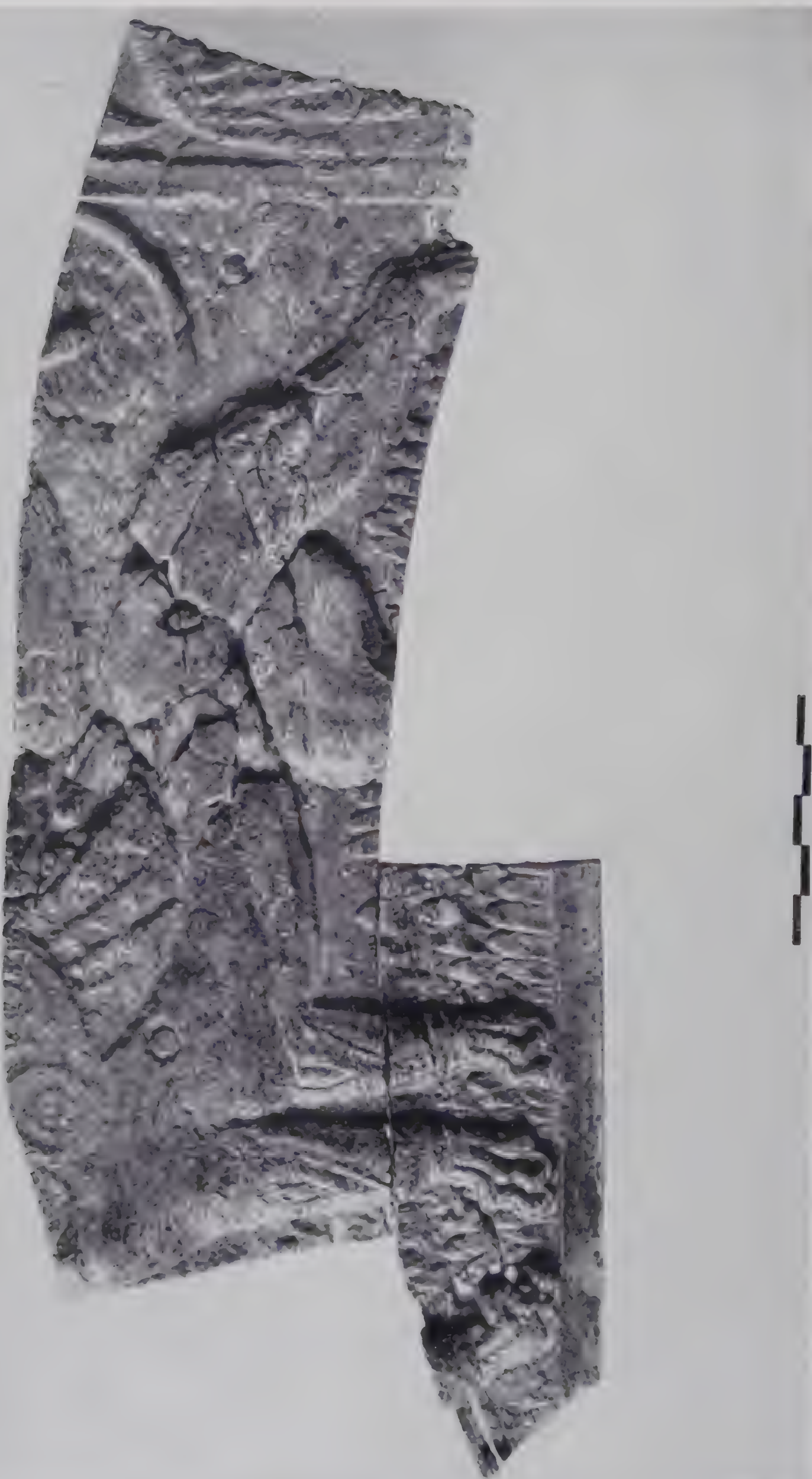
(c)



(d)

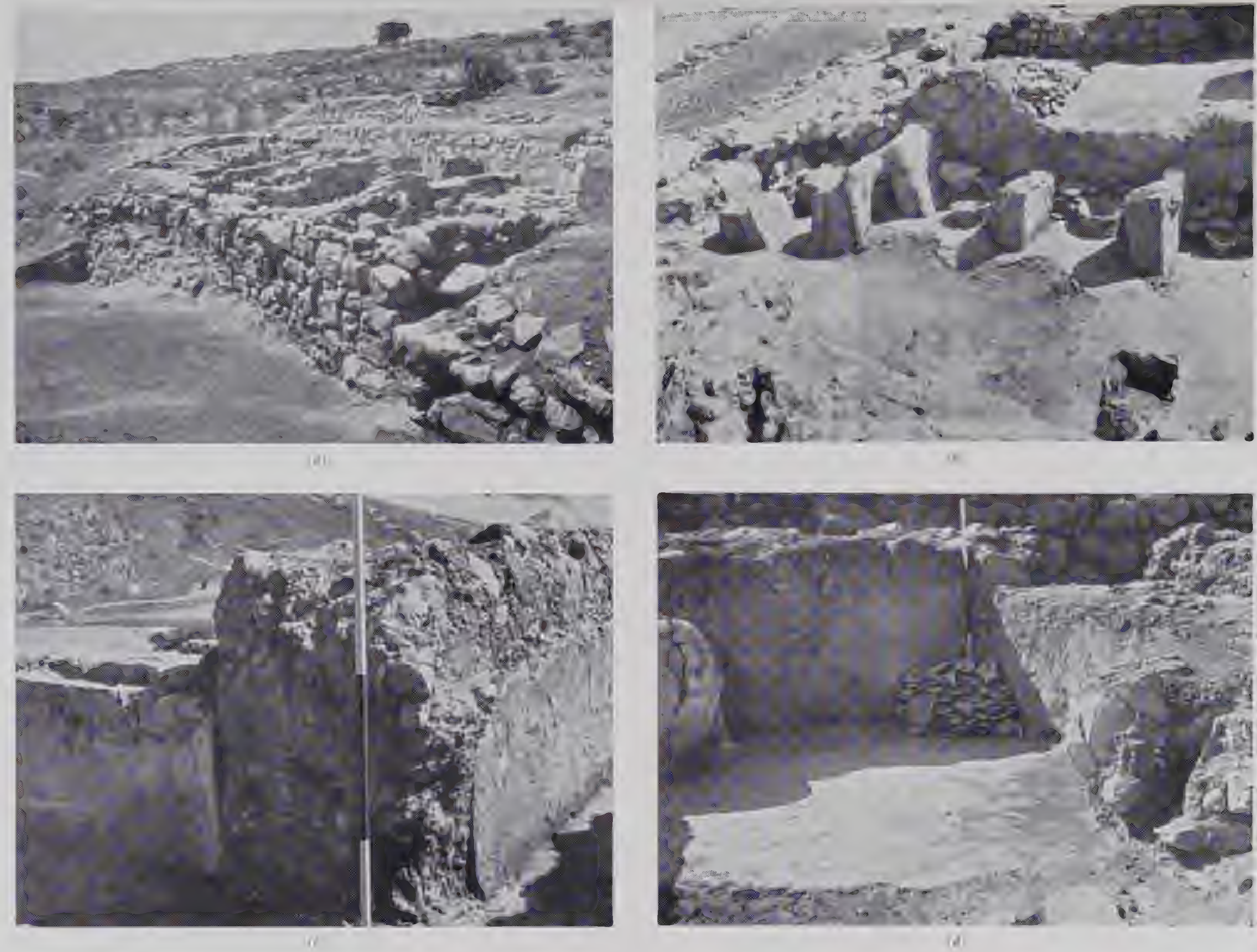
MYCENAE.

PREHISTORIC CEMETERY. (*a*) Model Figure-of-Eight Shields in Ivory. (*b*) Ivory Sceptre(?). (*c*) Handle of Silver Cap inlaid with Gold and Niello. (Scale about 4 : 5.)
HOUSE OF SHIELDS. (*d*) Model Figure-of-Eight Shield in Ivory. (Scale not quite 1 : 1.)



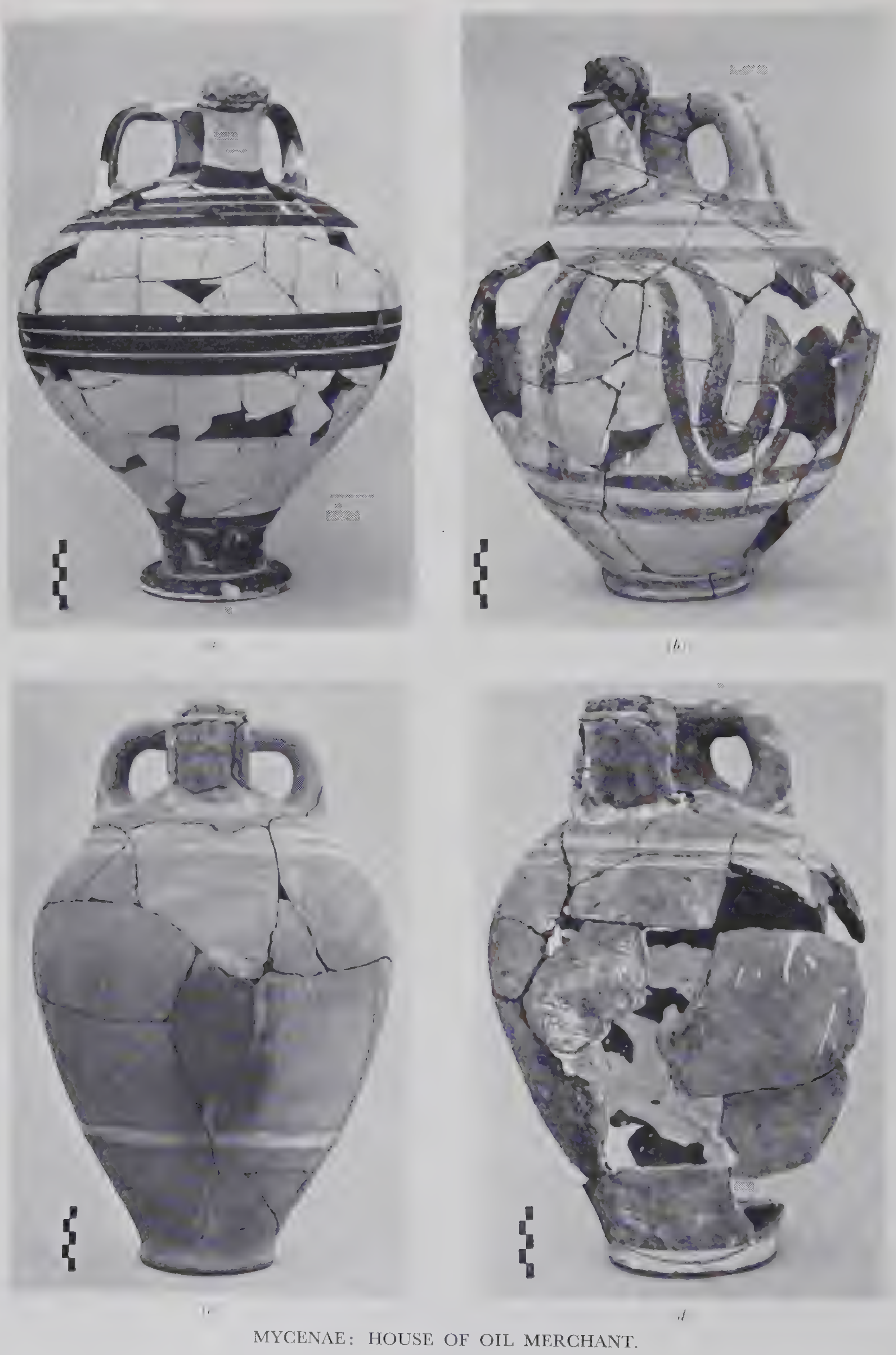
MYCENAE: PREHISTORIC CEMETERY.

IVORY PLAQUE.

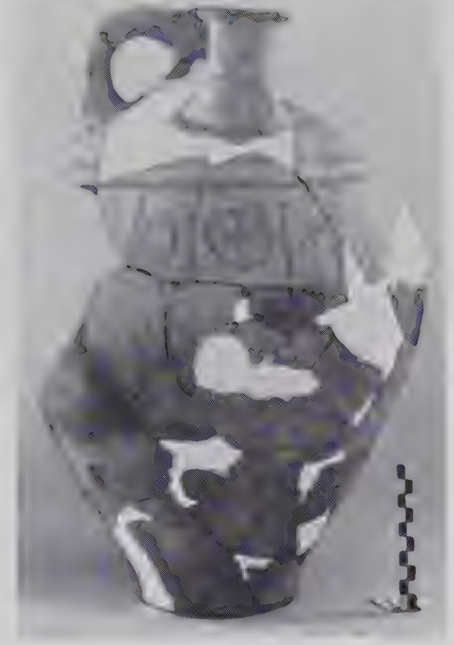


MYCENAE: HOUSE OF OIL MERCHANT.

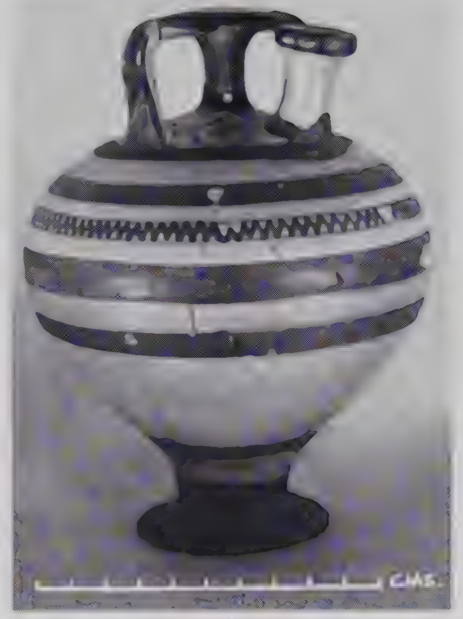
) General View from North-east. (*b*) Room 1 from North-west. (*c*) South Side of Entrance to Room 3. (*d*) Room 4 from East.



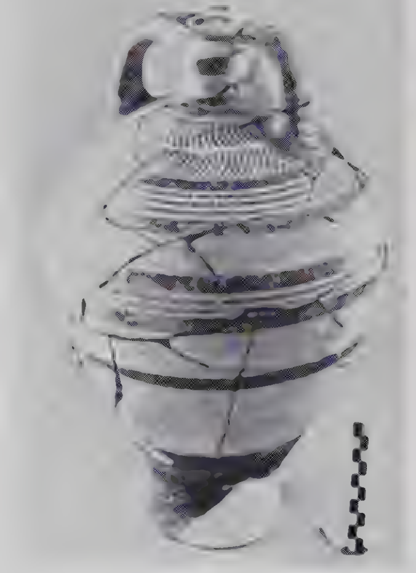
MYCENAE: HOUSE OF OIL MERCHANT.
STOPPERED STIRRUP JARS.



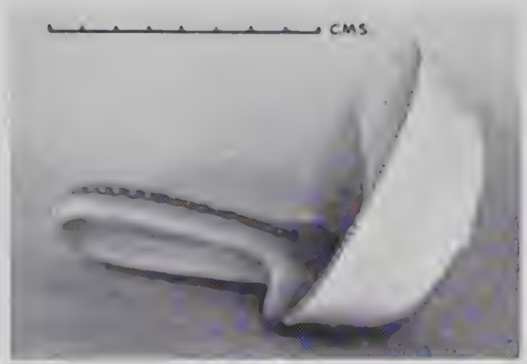
(a)



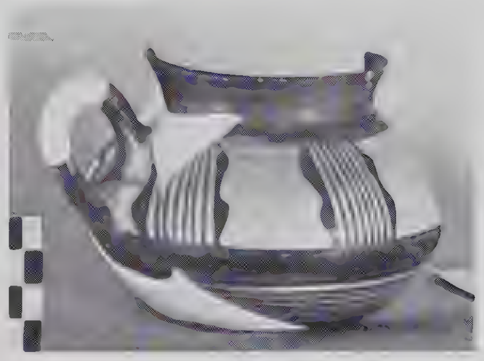
(b)



(c)



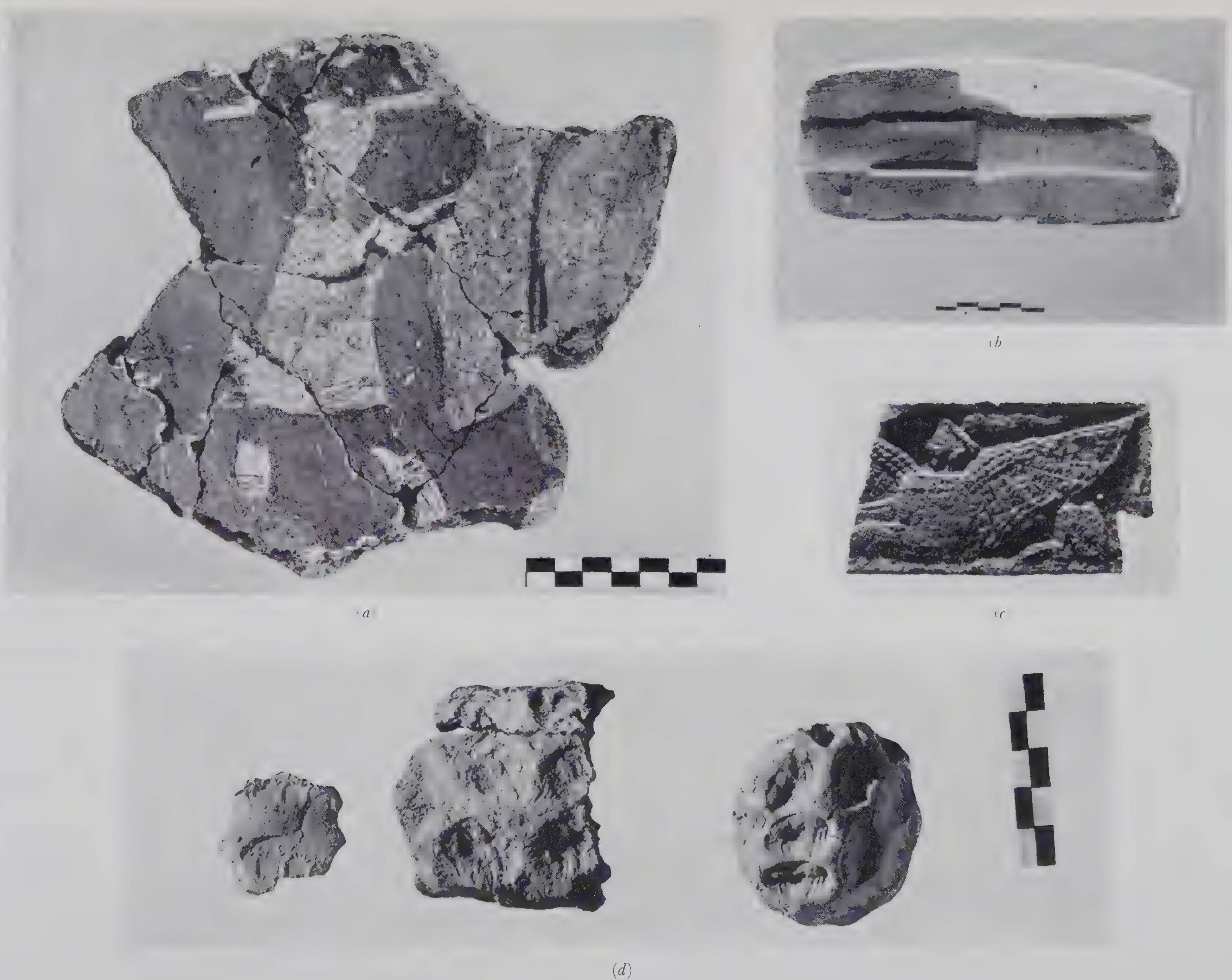
(d)



(e)

MYCENAE.

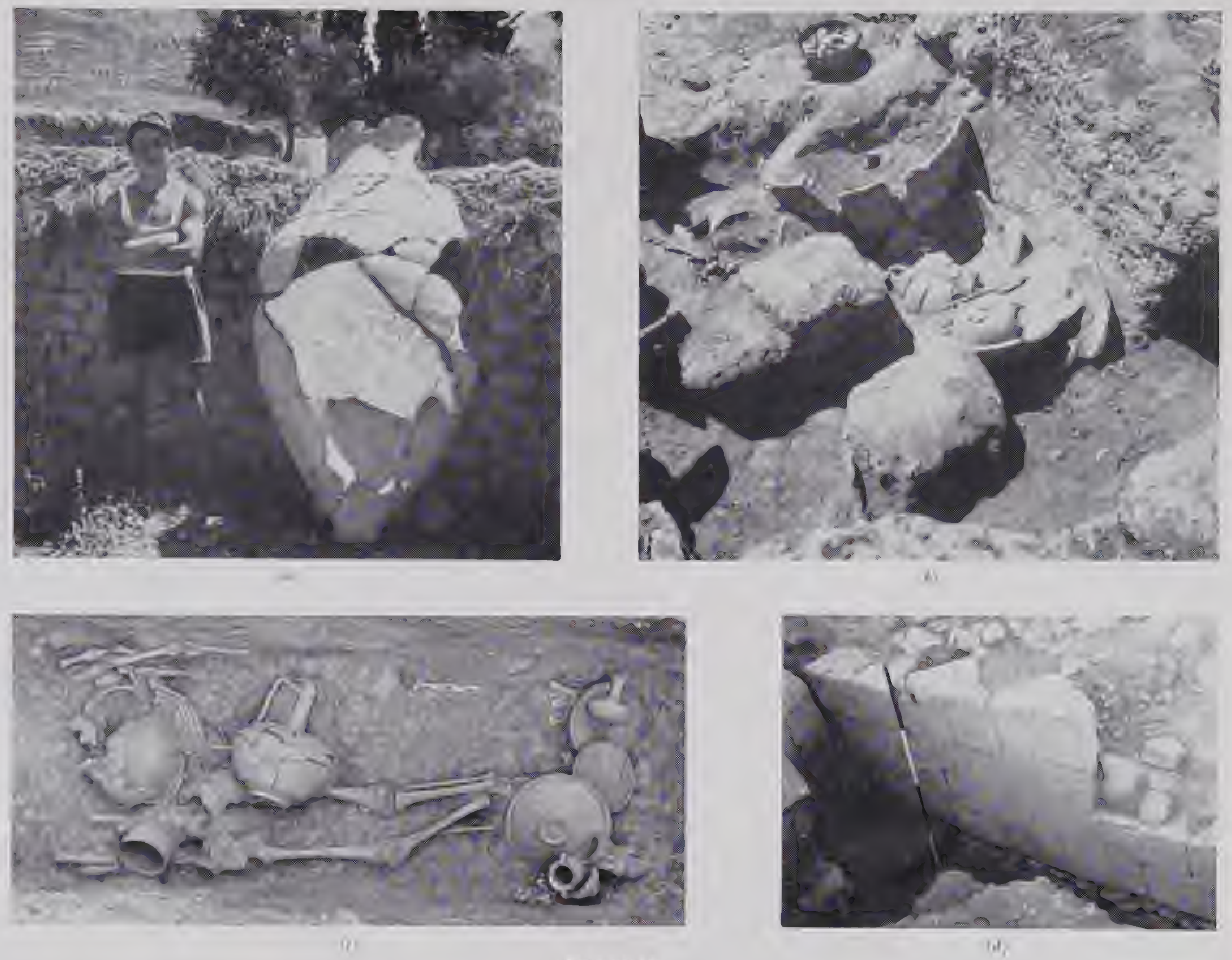
POROS WALL. (*a*) Inscribed Stirrup Jar L.H. IIIB.
HOUSE OF OIL MERCHANT. (*b*) Room 4, Stirrup Jar L.H. IIIB. (*d*) Room 4, Ladle L.H IIIB (*e*) Below Room 5, Cup L.H. IIIA.
HOUSE OF WINE MERCHANT. (*c*) Stirrup Jar L.H. IIIB.



MYCENAE.

HOUSE OF OIL MERCHANT. (*a*) Fresco below Floor at South End of Main Corridor. (*b*) Room 5, Sandstone Mould for Winged Axe. (*d*) Main Corridor (North End), Sealed Caps of Stirrup Jars.

HOUSE OF SPHINXES. (*c*) Storeroom, Ivory Plaque (Scale 5 : 7).

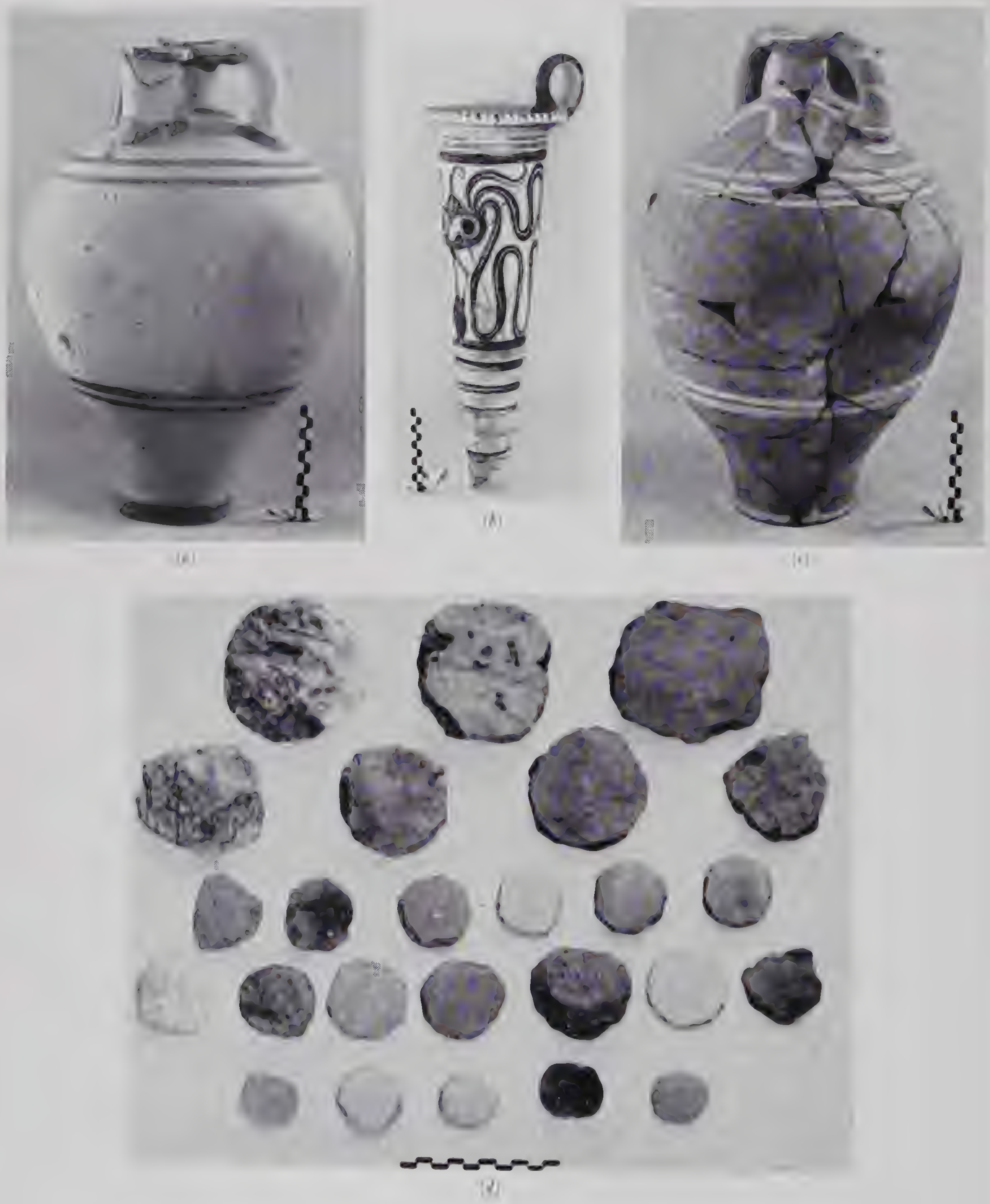


(a) (b) (c) (d)

MYCENAE.

HOUSE OF WINE MERCHANT. (*a*) PITHOS. (*b*) STIRRUP JARS AND PITHOI AS FOUND
PREHISTORIC CEMETERY. (*c*) HELLENISTIC GRAVE.
POROS WALL. (*d*) FACE FROM EAST.

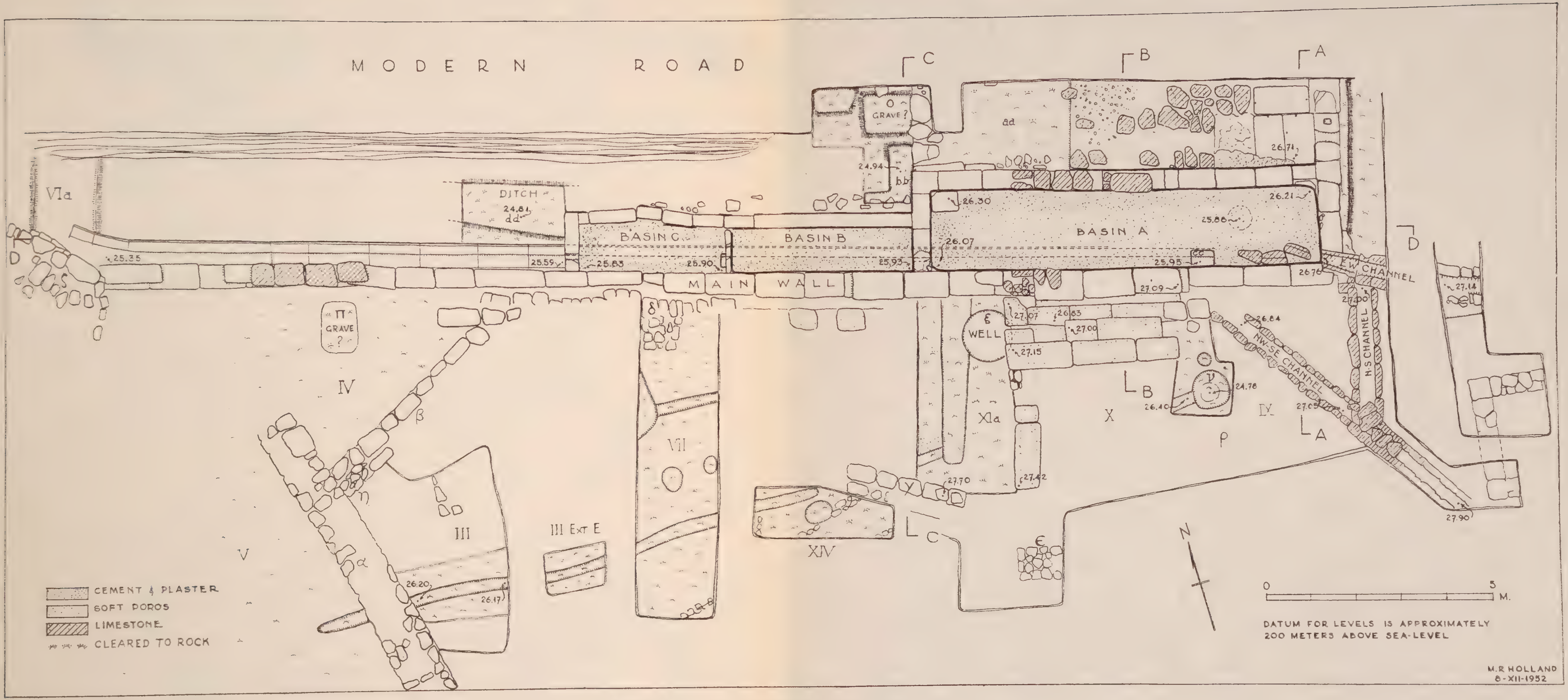
PLATE 11.



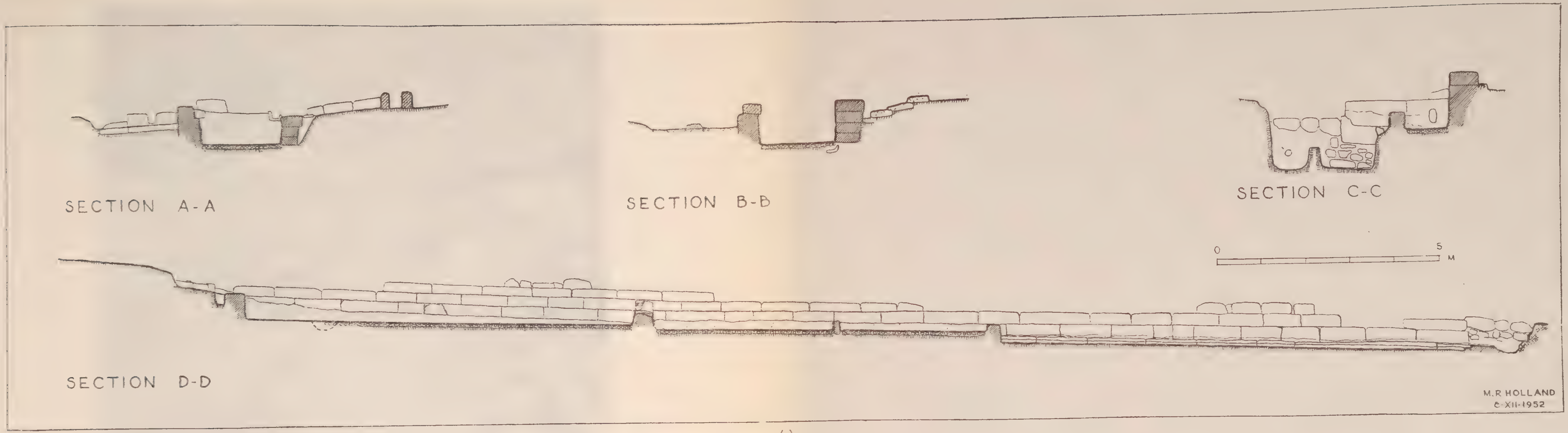
(a) (b) (c) (d)

MYCENAE: HOUSE OF WINE MERCHANT.

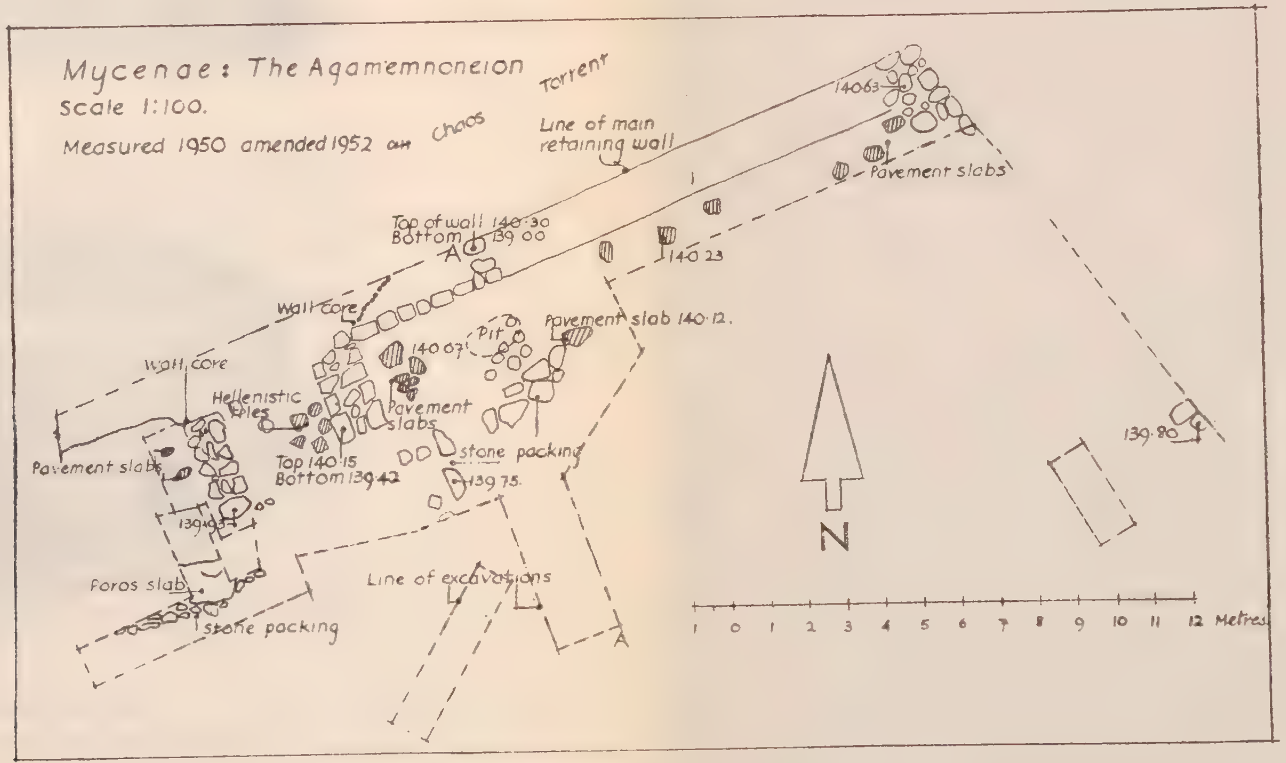
(*a*) Stirrup Jar. (*b*) Rhyton L.H. IIIA. (*c*) Stirrup Jar (*d*) Stone and Pottery Caps


MODERN ROAD
C
B
A
D
O
GRAVE?
aa
26.71
24.94
bb
VIa
DITCH
24.81
dd
26.30
26.21
25.88
BASIN C
BASIN B
BASIN A
26.07
25.35
25.59
25.83
25.90
25.93
25.95
cc
26.76
E-W CHANNEL
MAIN WALL
27.09
27.14
27.00
Π
GRAVE
?
δ
ε
WELL
27.07
26.83
27.00
27.15
26.84
NW-SE CHANNEL
N-S CHANNEL
IV
β
VII
B
γ
24.78
26.40
27.05
IX
A
X
XIa
ρ
η
27.70
27.42
γ
III
III Ext E
XIV
C
ε
27.90
V
α
26.20
26.17
N
0
5
M.
CEMENT & PLASTER
SOFT POROS
LIMESTONE
CLEARED TO ROCK
DATUM FOR LEVELS IS APPROXIMATELY
200 METERS ABOVE SEA-LEVEL
M.R. HOLLAND
8-XII-1952

MYCENAE. PLAN OF PERSEIA FOUNTAIN HOUSE.

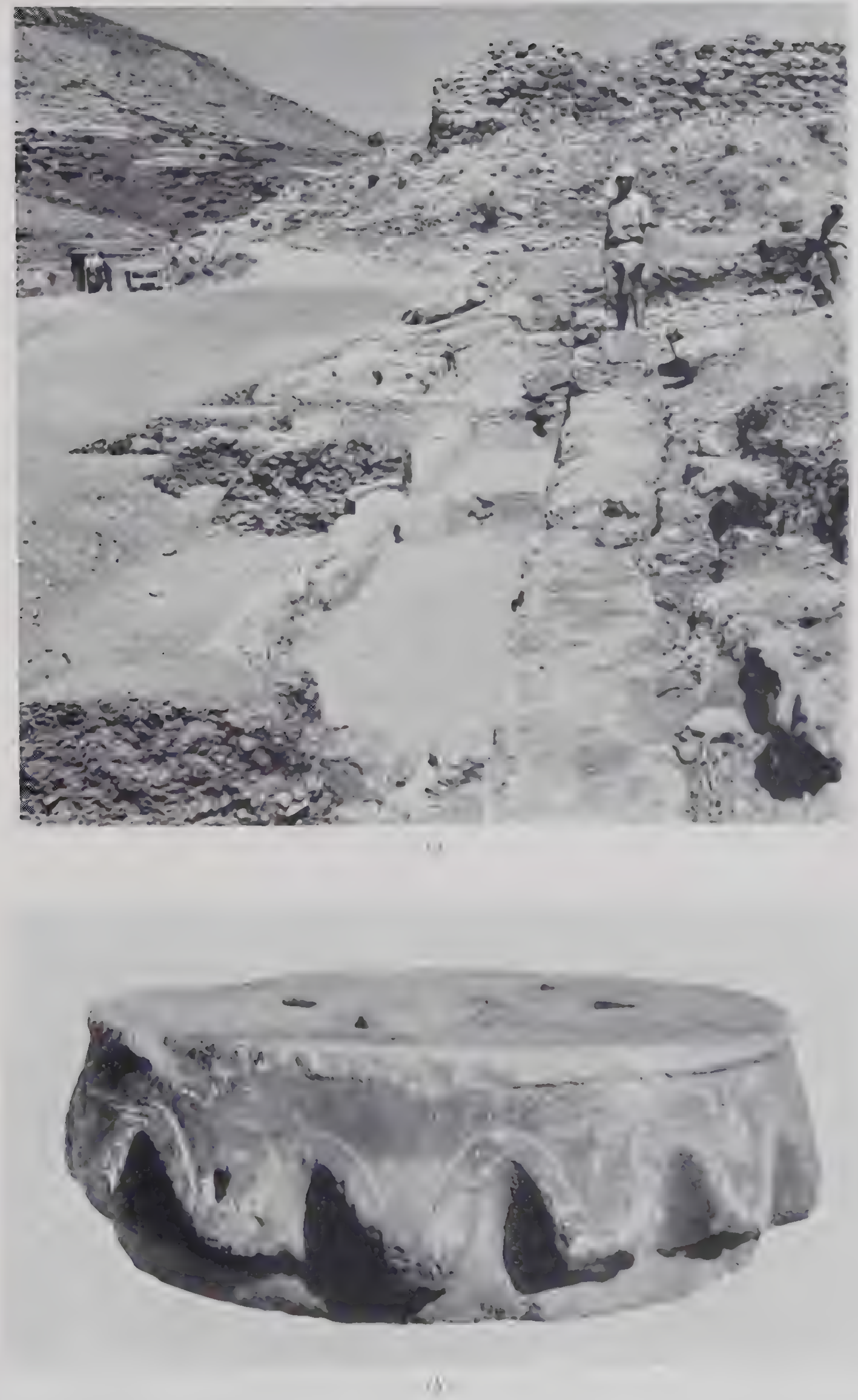

SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
0
5
M
M.R HOLLAND
6·XII·1952

(*a*)

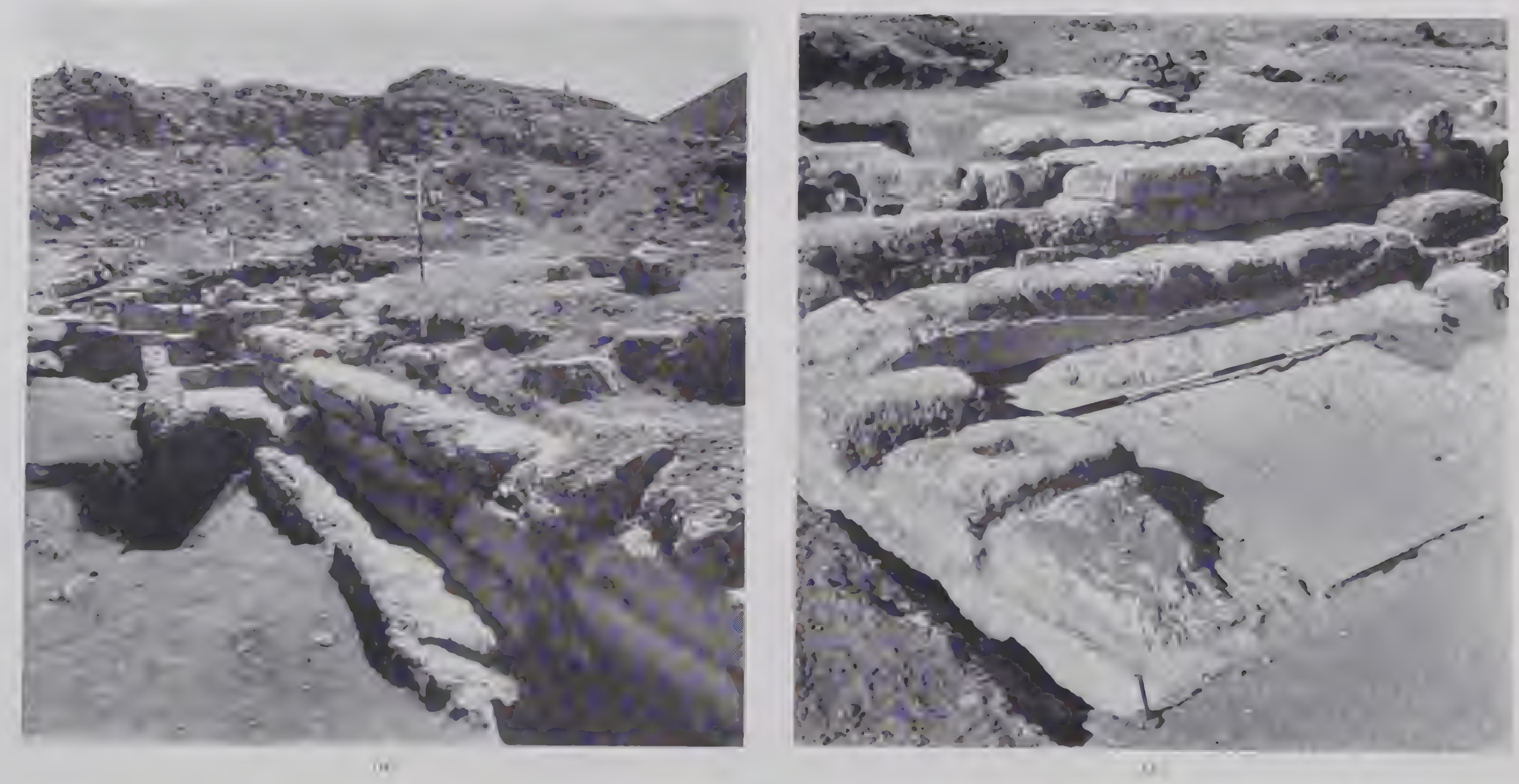

Mycenae: The Agamemnoneion
Scale 1:100.
Measured 1950 amended 1952
Chaos
Torrent
Line of main retaining wall
14063
Pavement slabs
Top of wall 140·30
Bottom 139 00
A
140 23
Wall core
Pavement slab 140·12.
Pit
140 07
Wall core
Hellenistic tiles
Pavement slabs
Pavement slabs
Top 140·15
Bottom 139·42
stone packing
139 75.
139·95
Poros slab
stone packing
Line of excavations
A
N
139·80
1 0 1 2 3 4 5 6 7 8 9 10 11 12 Metres

(*b*)

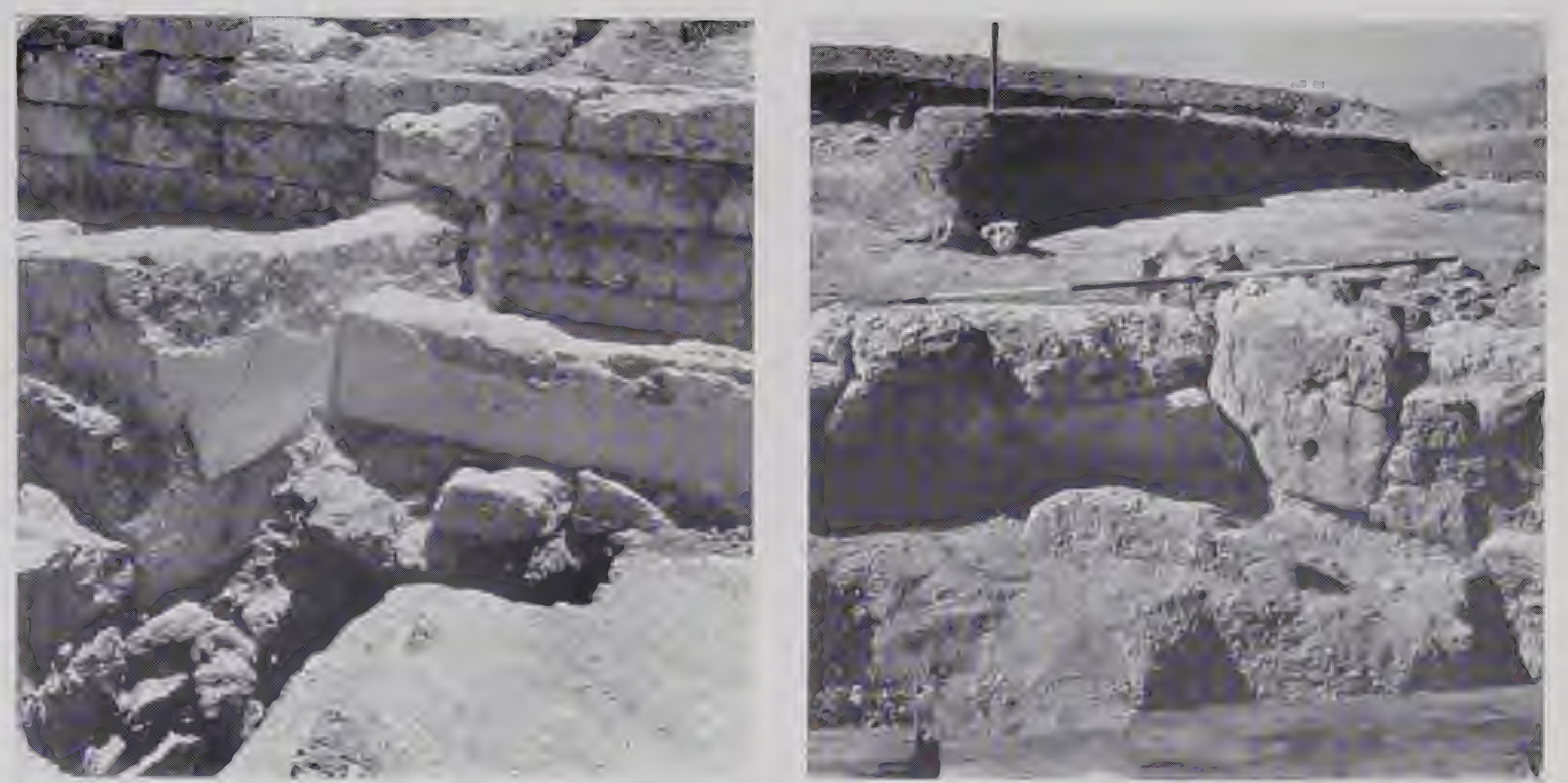
MYCENAE: (*a*) PERSEIA FOUNTAIN HOUSE, SECTIONS THROUGH PLAN, PLATE 12, AT A-A, B-B, C-C, D-D. (*b*) AGAMEMNONEION, PLAN OF EXCAVATION. (BY C. I. HOBBIS.)



MYCENAE: PERSEIA FOUNTAIN HOUSE.
(*a*) View from West. (*b*) Inscribed Poros Base, found by Tsountas (Scale 1 : 6)

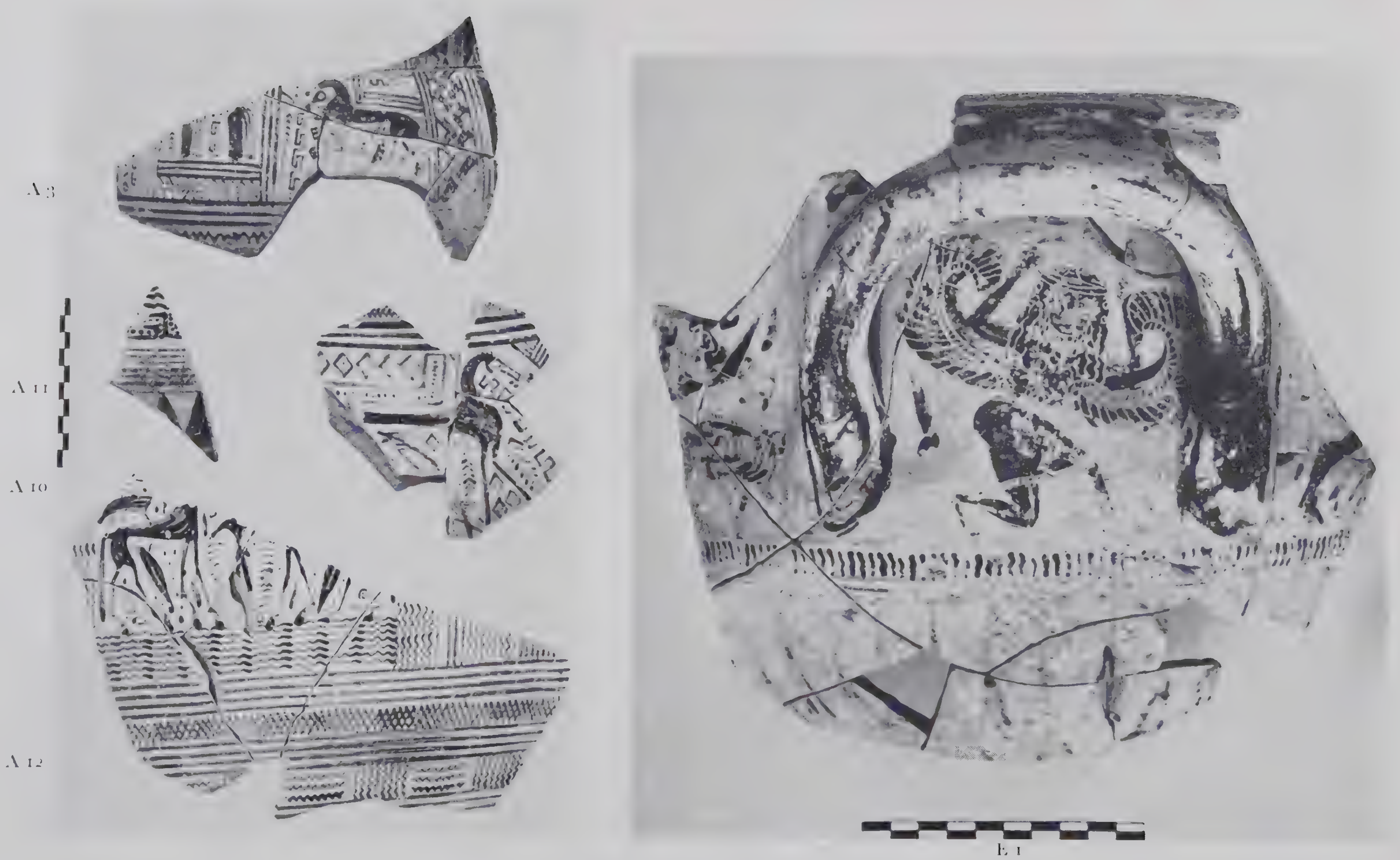


MYCENAE: PERSEIA FOUNTAIN HOUSE.
(*a*) View from West with Water Channel. (*b*) View from North-east.

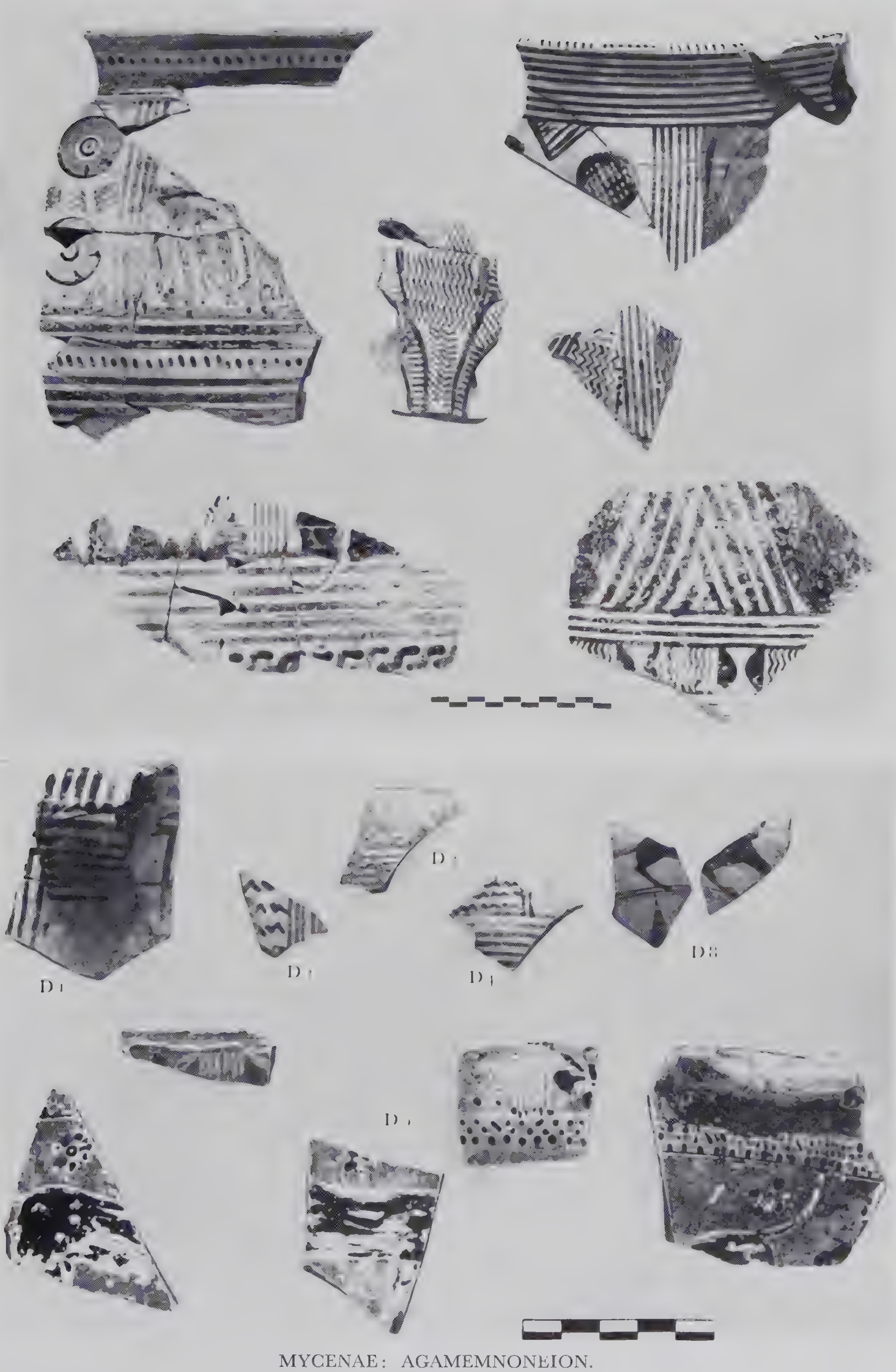


MYCENAE PERSEIA FOUNTAIN HOUSE

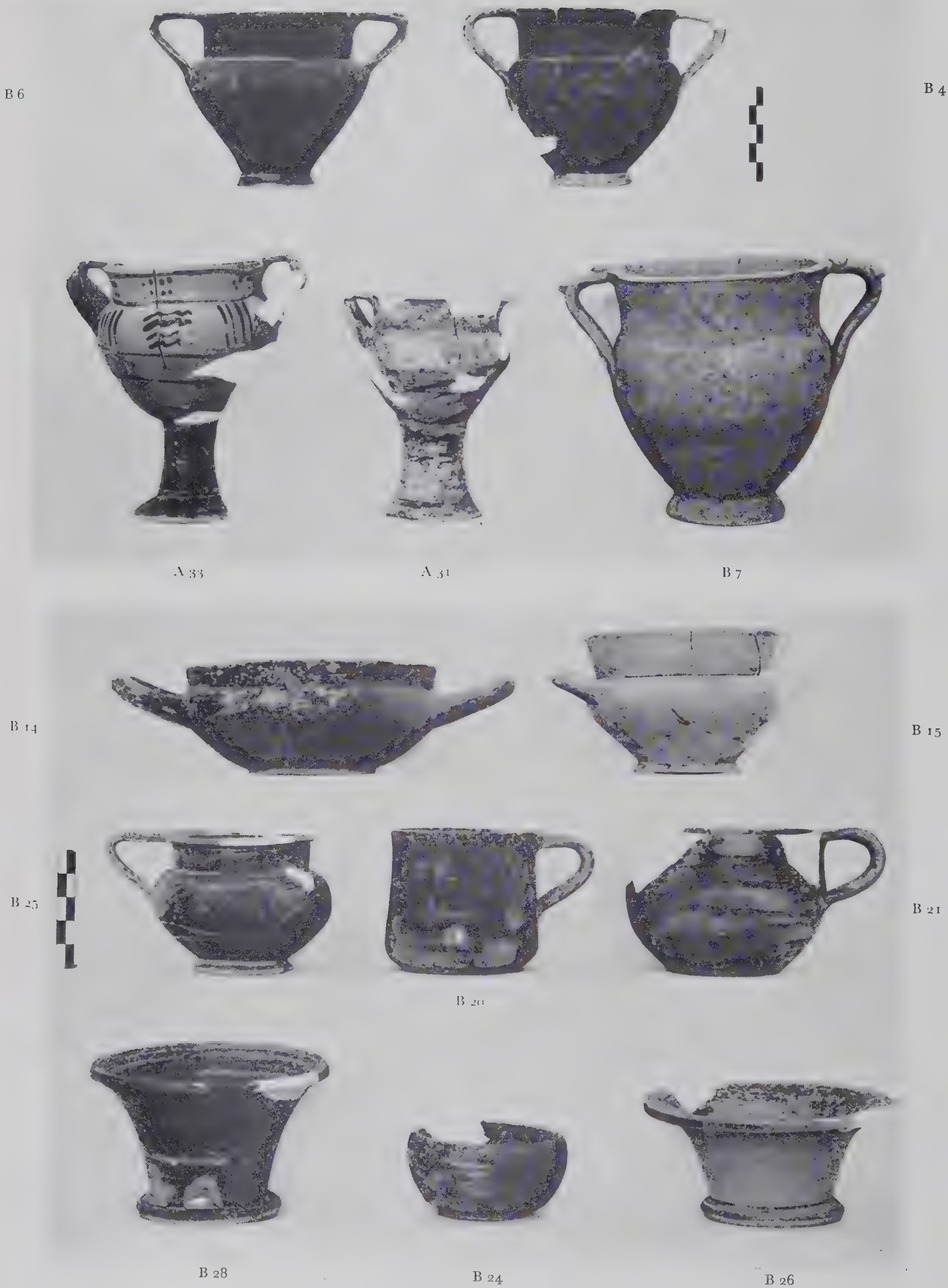
(*a*) NORTH-WEST CORNER OF BASIN A. (*b*) ABUTMENT OF WEST END OF MAIN WALL AGAINST CURVED WALL


A 3
A 11
A 10
A 12
E 1

MYCENAE: AGAMEMNONEION.
Left, Geometric Pottery. *Right*, Early B.F. Fragment.

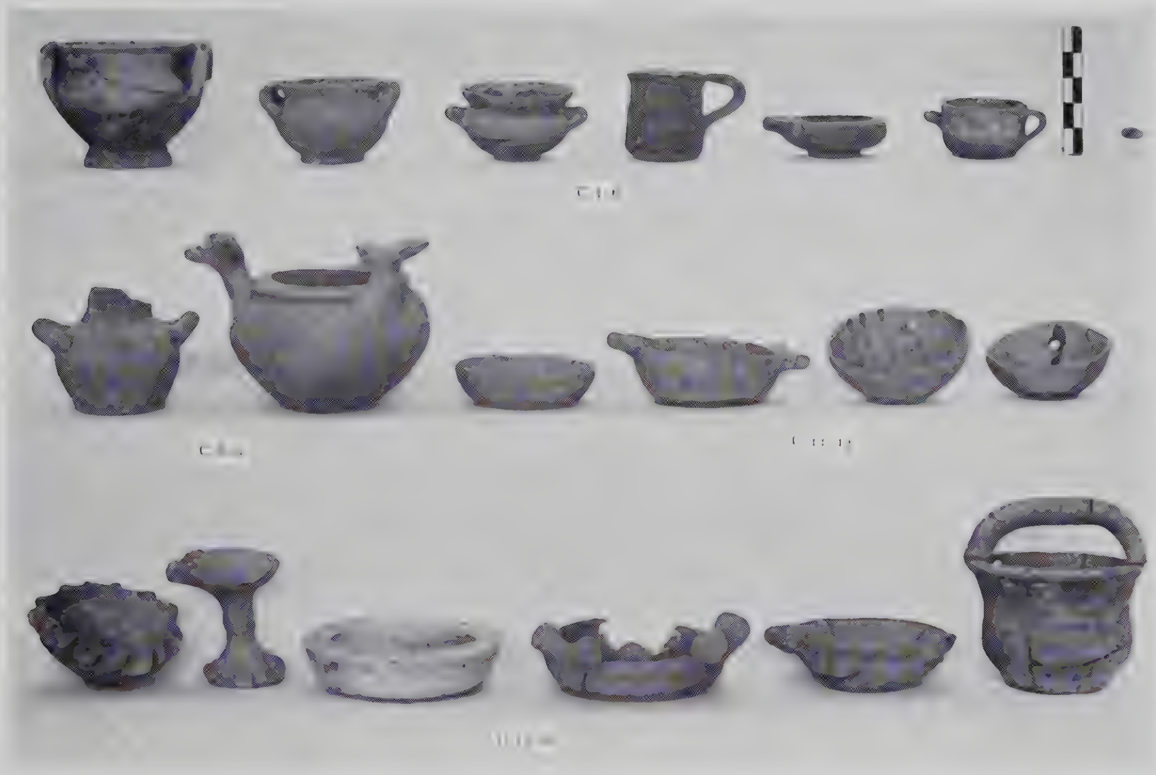

A 19
A 13
A 16
A 15
A 14
D 3
D 2
D 4
D 8
D 1
D 5

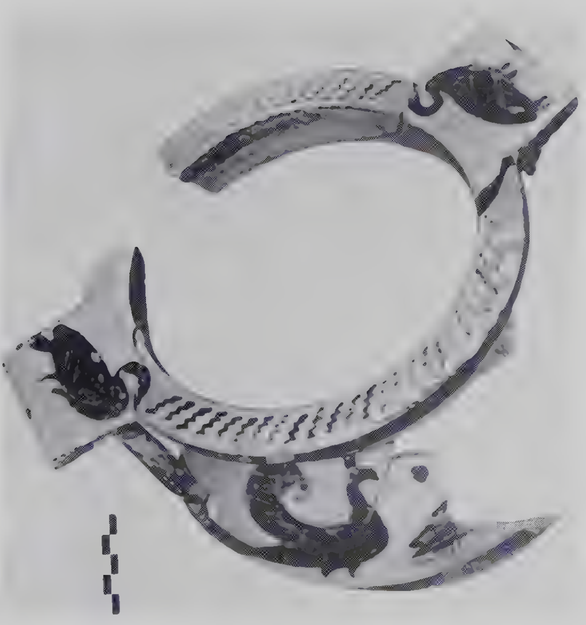
MYCENAE: AGAMEMNONEION.
Above, GEOMETRIC POTTERY. *Below*, PROTOCORINTHIAN SHERDS.

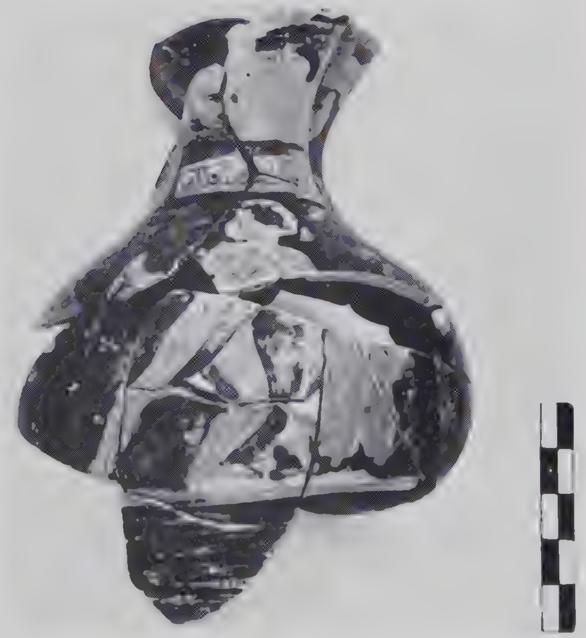

B 6
B 4
A 33
A 31
B 7
B 14
B 15
B 25
B 21
B 20
B 28
B 24
B 26

MYCENAE: AGAMEMNONEION.

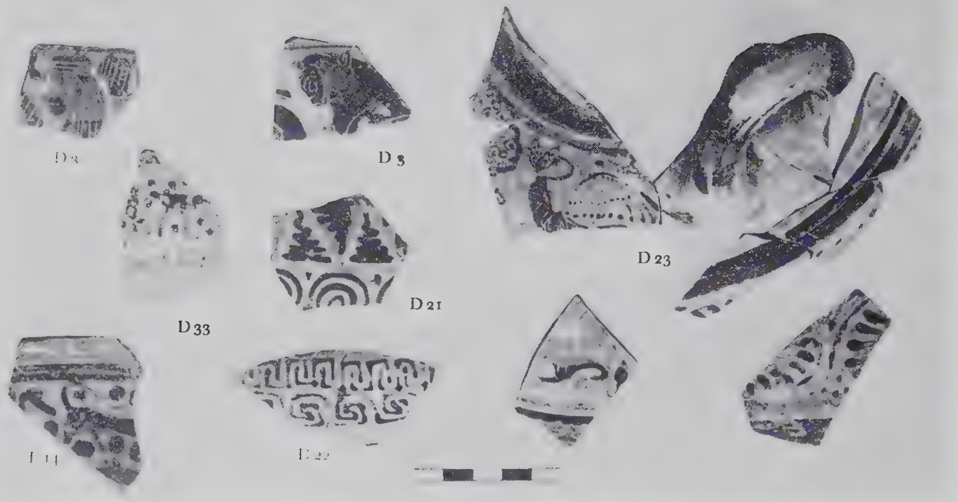
SUBGEOMETRIC KRATERISKOI AND ARCHAIC GLAZED WARE



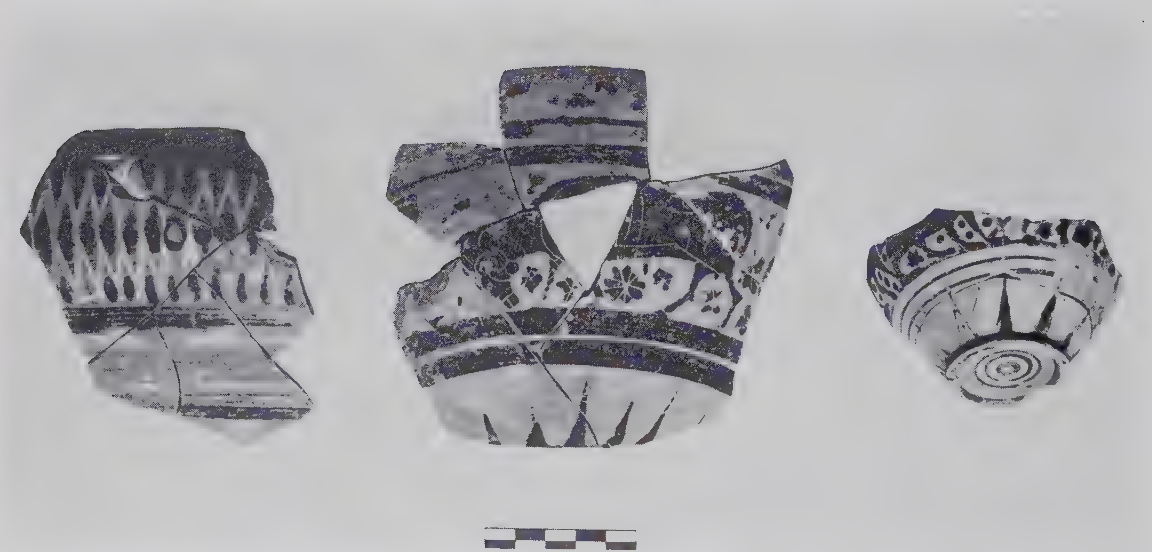




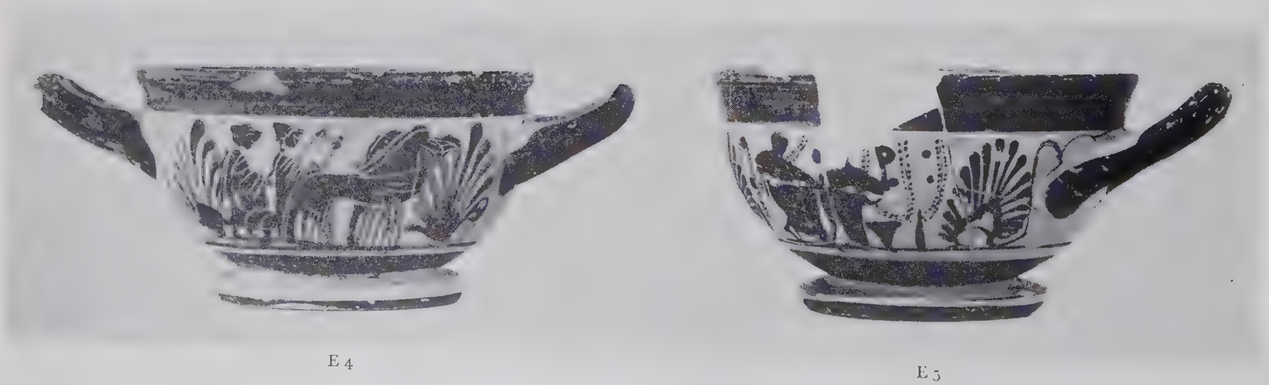
MYCENAE: AGAMEMNONEION.
ARGIVE MINIATURE AND CORINTHIAN VASES.



D 3 D 5 D 23 D 33 D 21 D 14 D 22



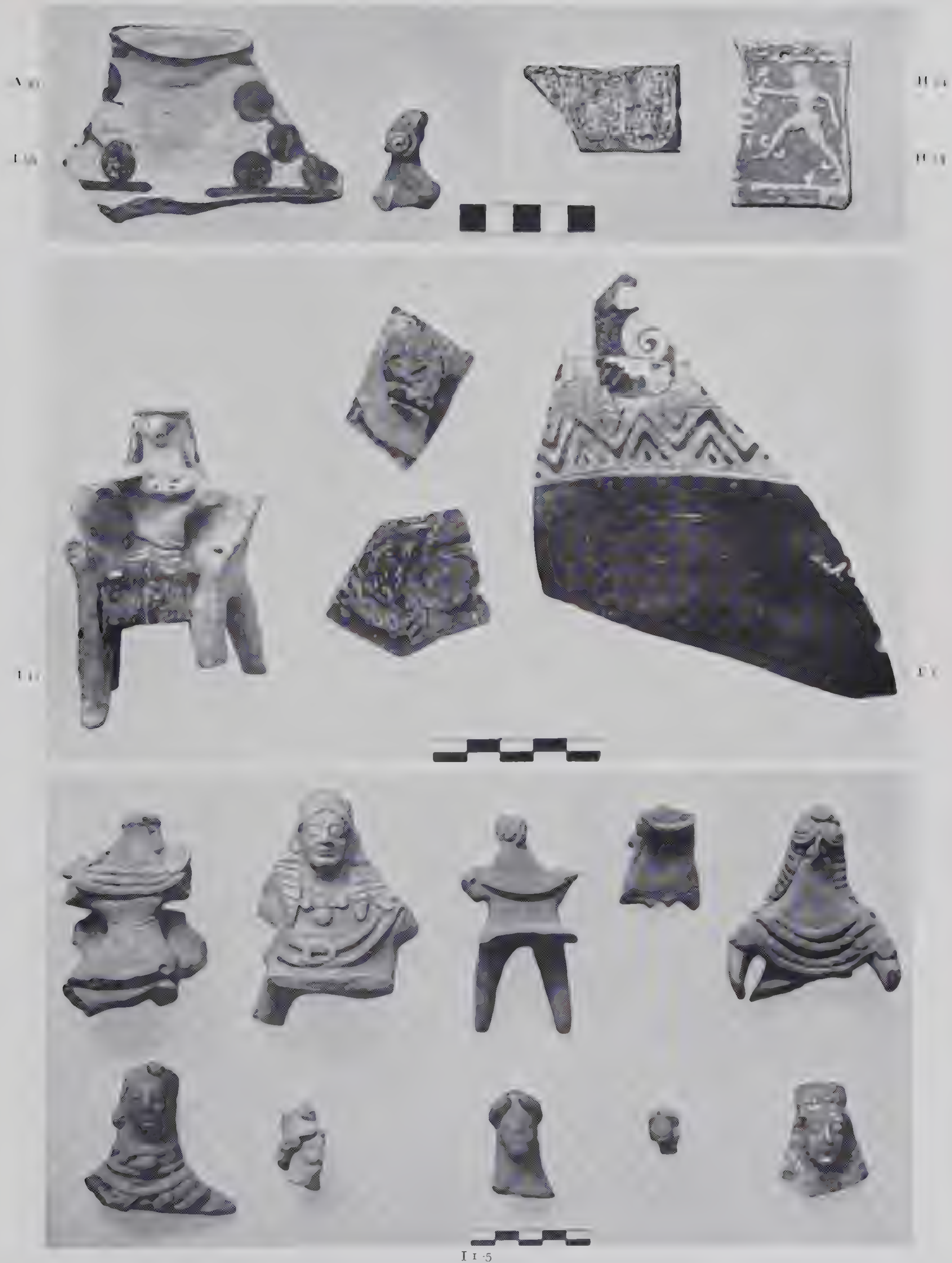
D 20 D 29 D 34



E 4 E 5

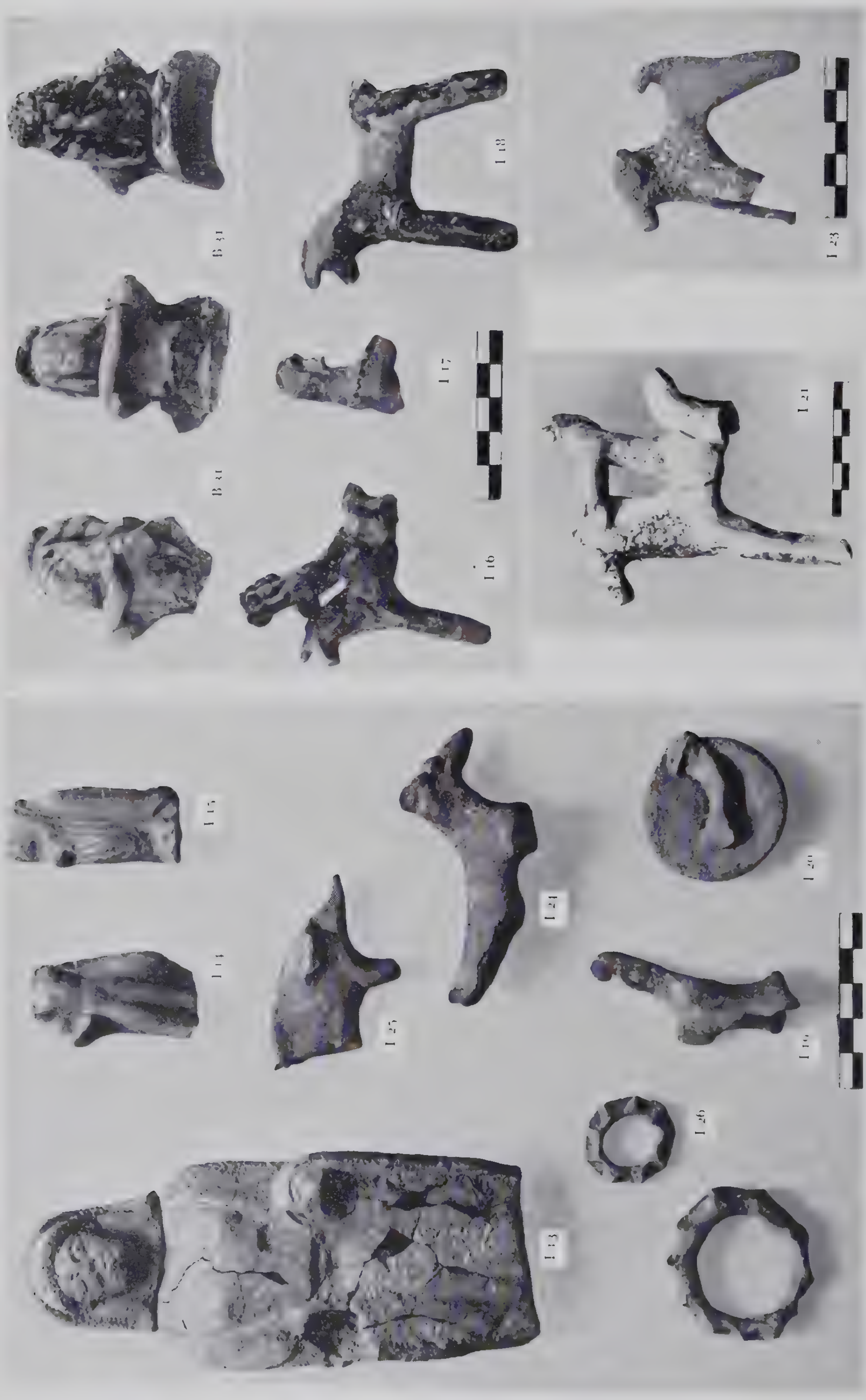
MYCENAE: AGAMEMNONEION.

CORINTHIAN POTTERY AND B.F. SKYPHOI.

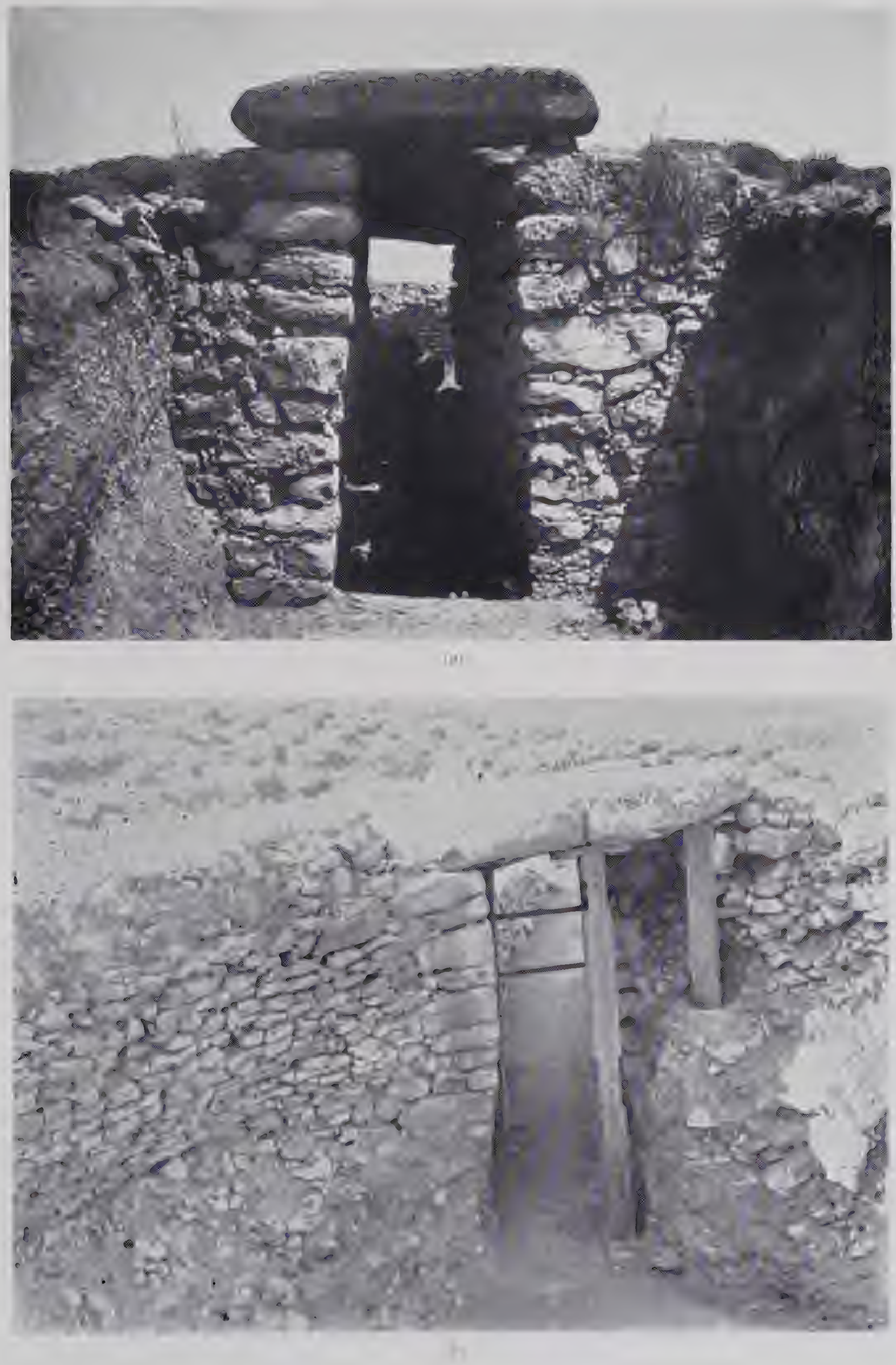


MYCENAE: AGAMEMNONEION.

Various Sherds and Terracottas.


B 31
B 31
I 18
I 17
I 16
I 23
I 21
I 15
I 14
I 25
I 24
I 20
I 19
I 26
I 13

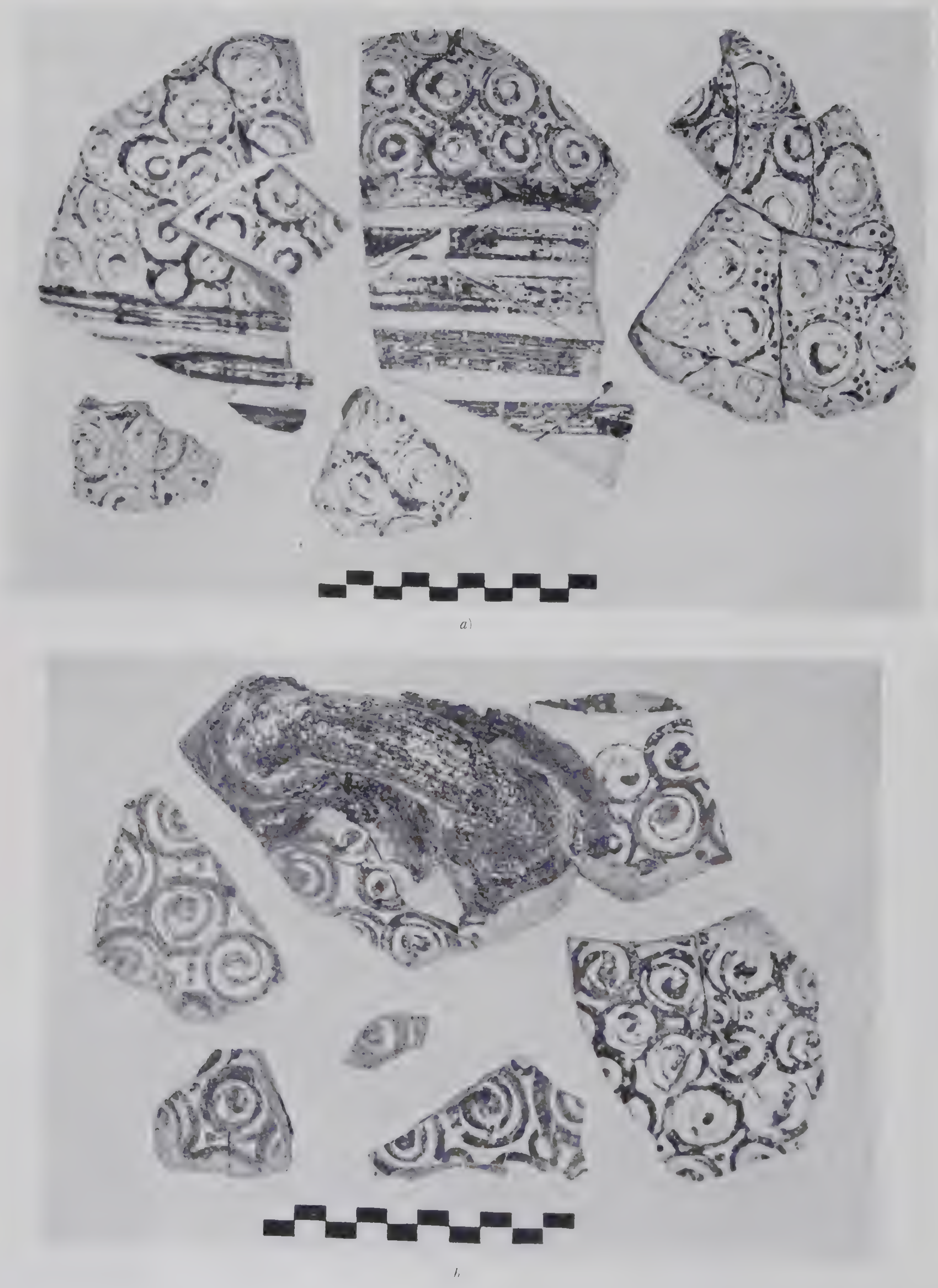
MYCENAE: AGAMEMNONEION.
Terracotta Figurines.



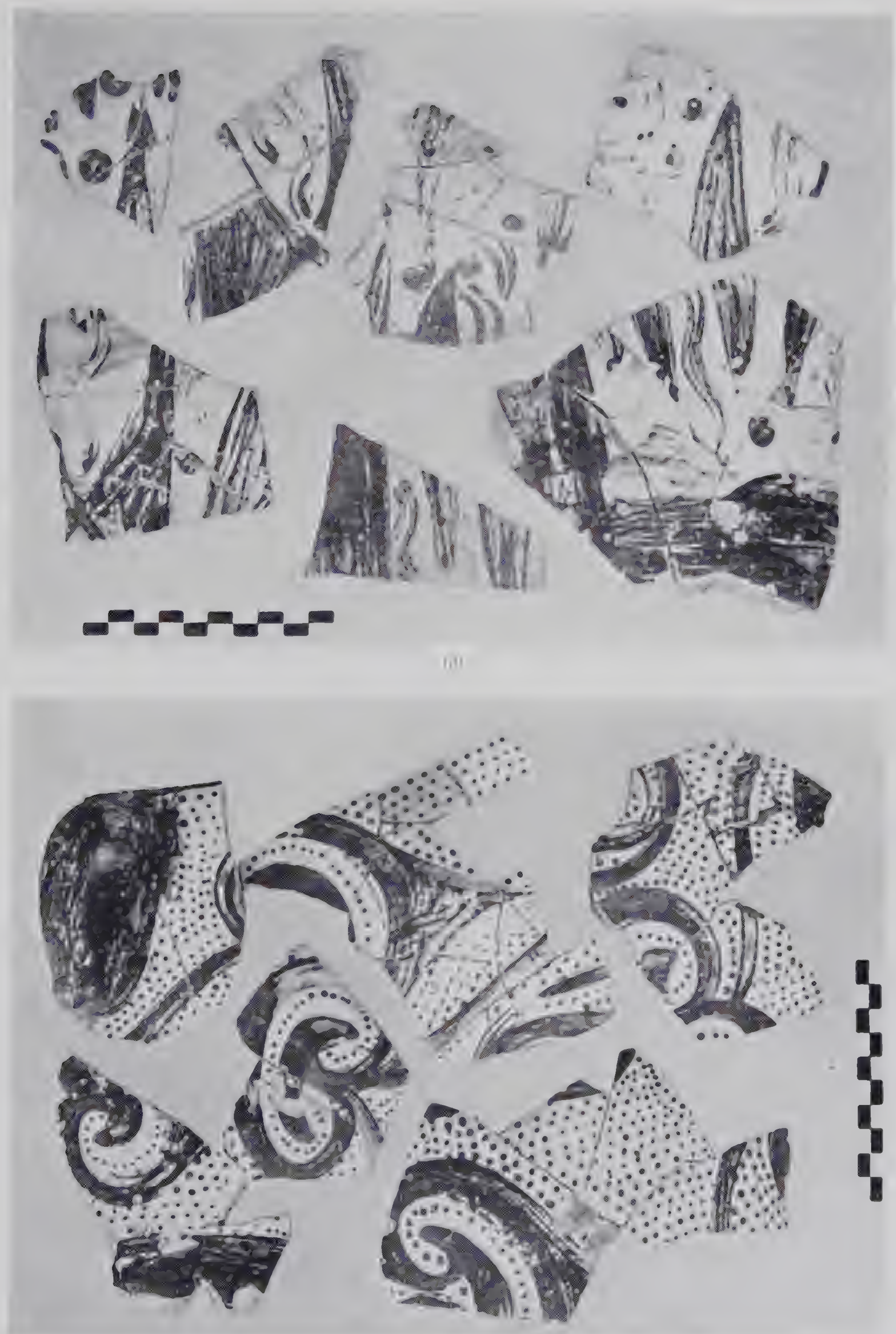
(a)

(b)

MYCENAE: THE EPANO PHOURNOS THOLOS TOMB, ENTRANCE.



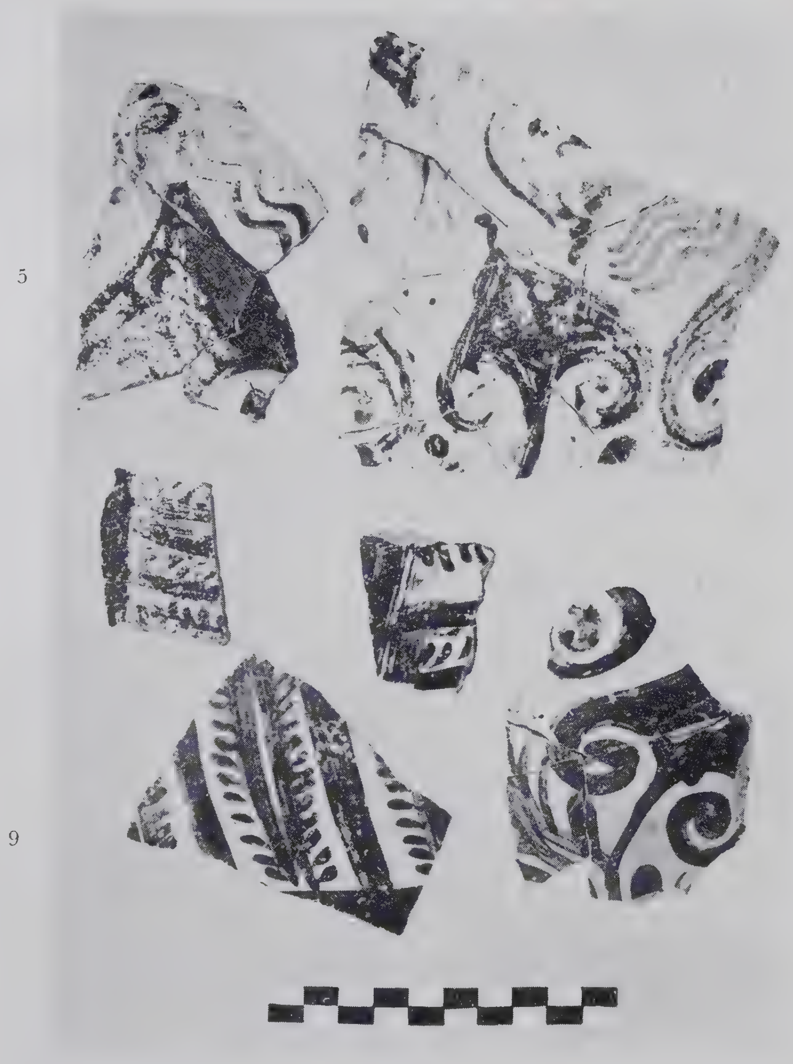
MYCENAE: THE EPANO PHOURNOS THOLOS TOMB, PALACE STYLE AMPHORAE (Nos. 2 AND 3).



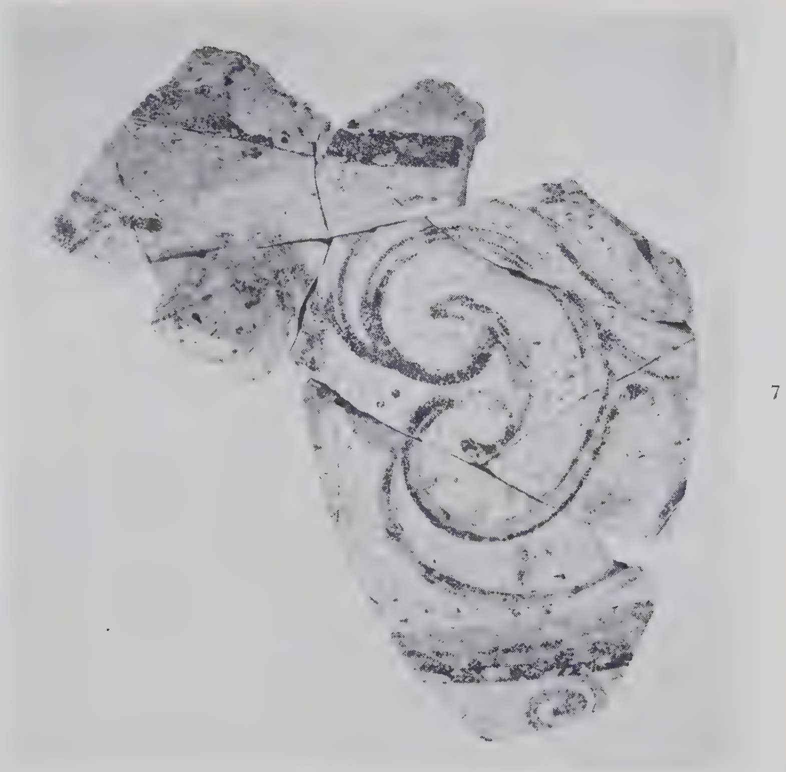
(a)

(b)

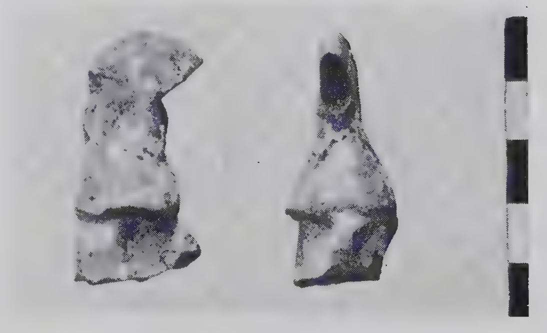
MYCENAE: THE EPANO PHOURNOS THOLOS TOMB, PALACE STYLE AMPHORAE (Nos. 4 AND 6)



(*a*)

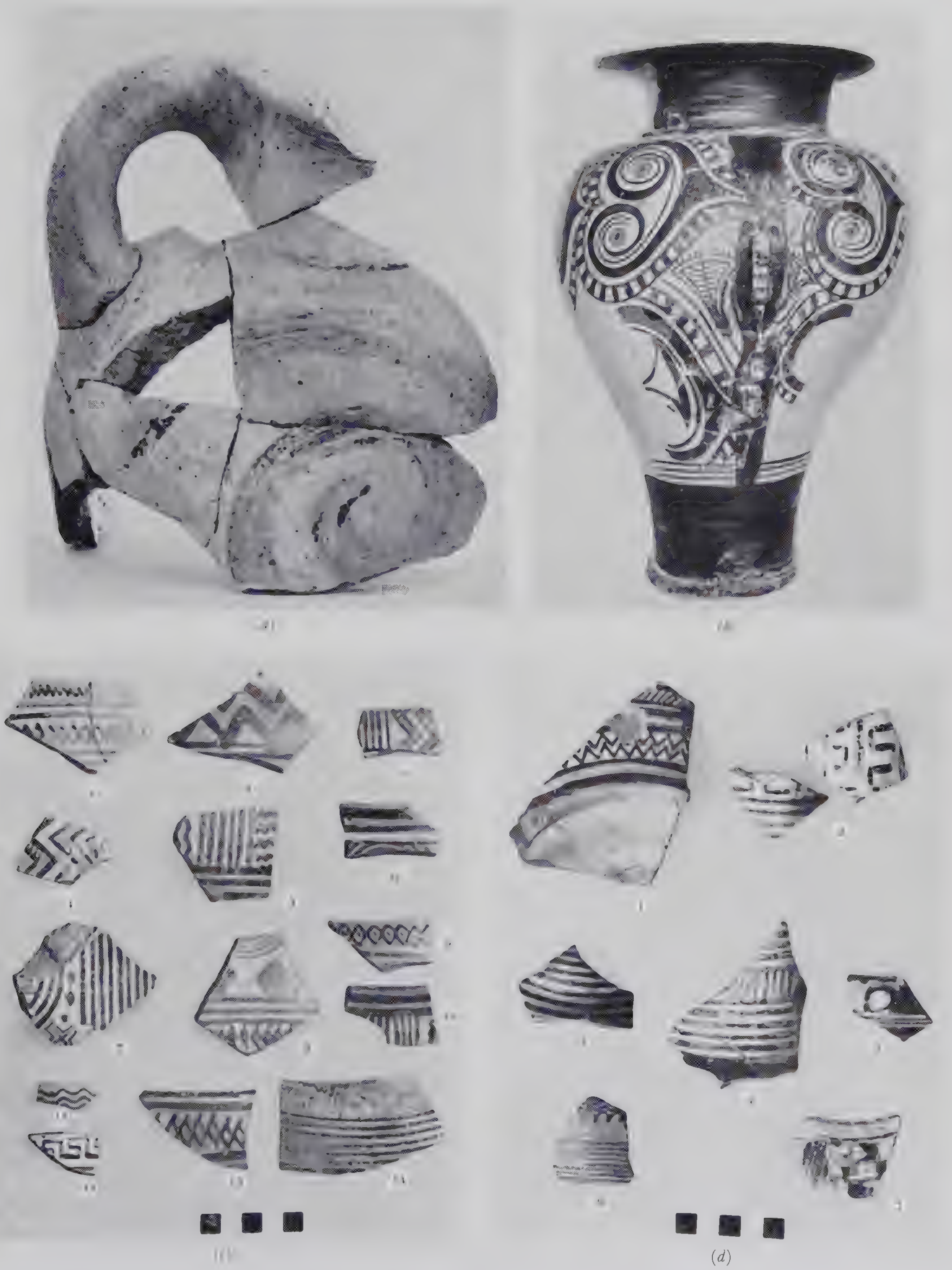


(*b*) (Scale almost 1 : 2)

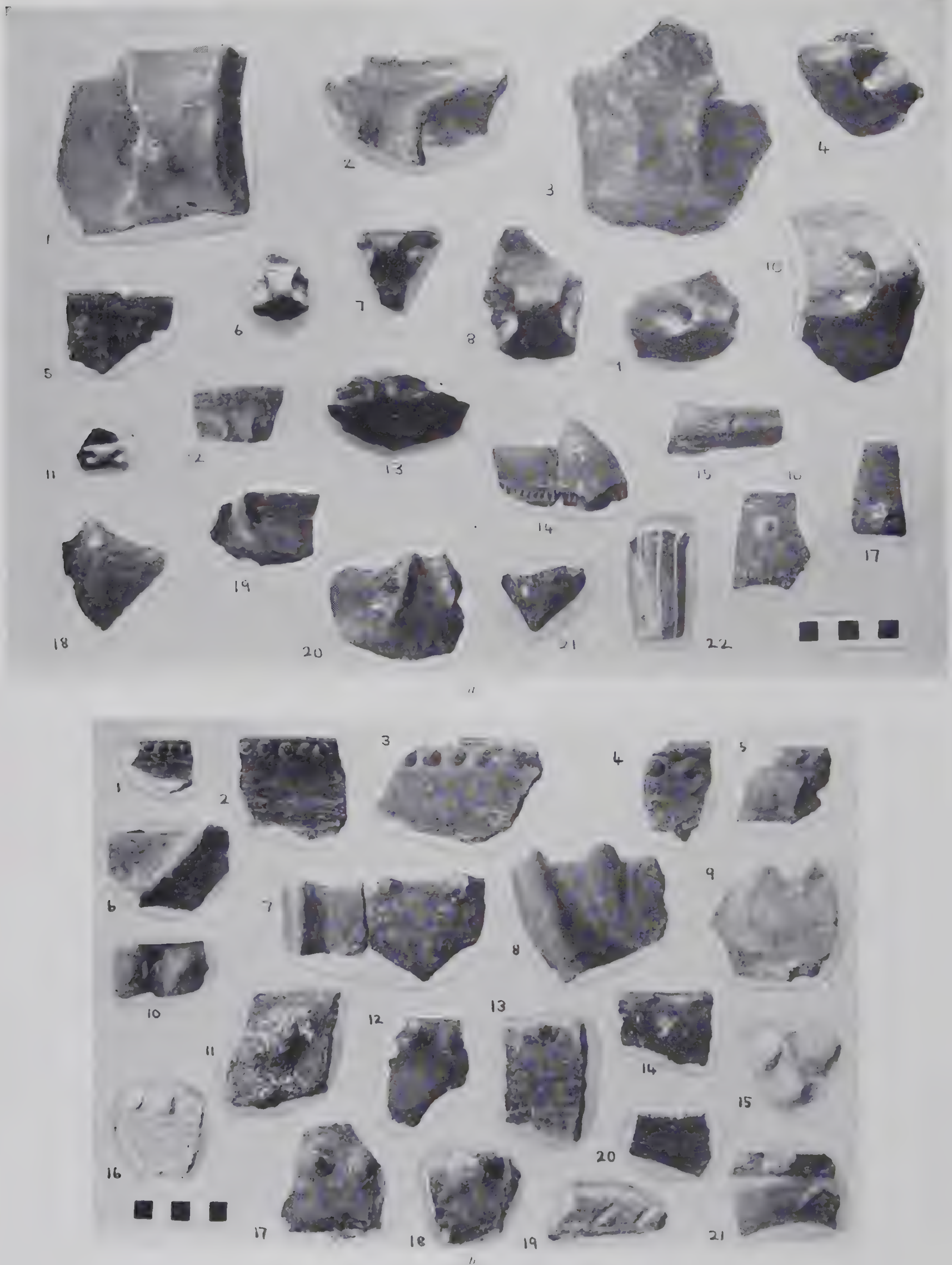


(*c*)

MYCENAE: THE EPANO PHOURNOS THOLOS TOMB.
(*a–b*) PALACE STYLE AMPHORAE (NOS. 5, 7, 9). (*c*) HEAD OF TERRACOTTA WARRIOR (NO. 30).



MYCENAE: THE EPANO PHOURNOS THOLOS TOMB. (*a*) Fragment of Jug or Amphora (No. 12) (Scale 1 : 2). (*b*) Palace Style Amphora (No. 1) (Scale about 1 : 7). (*c–d*) Post-Mycenaean Pottery.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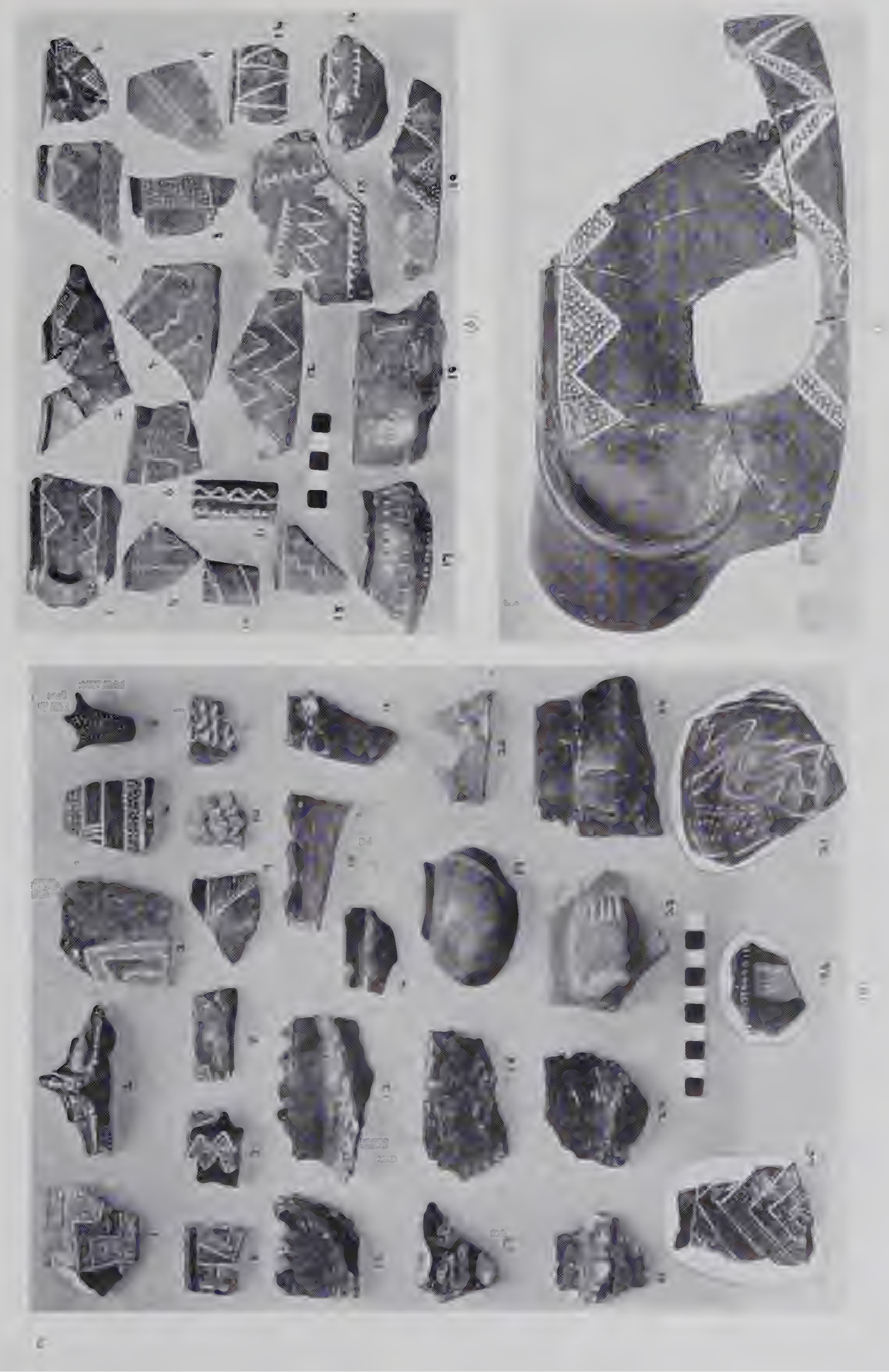
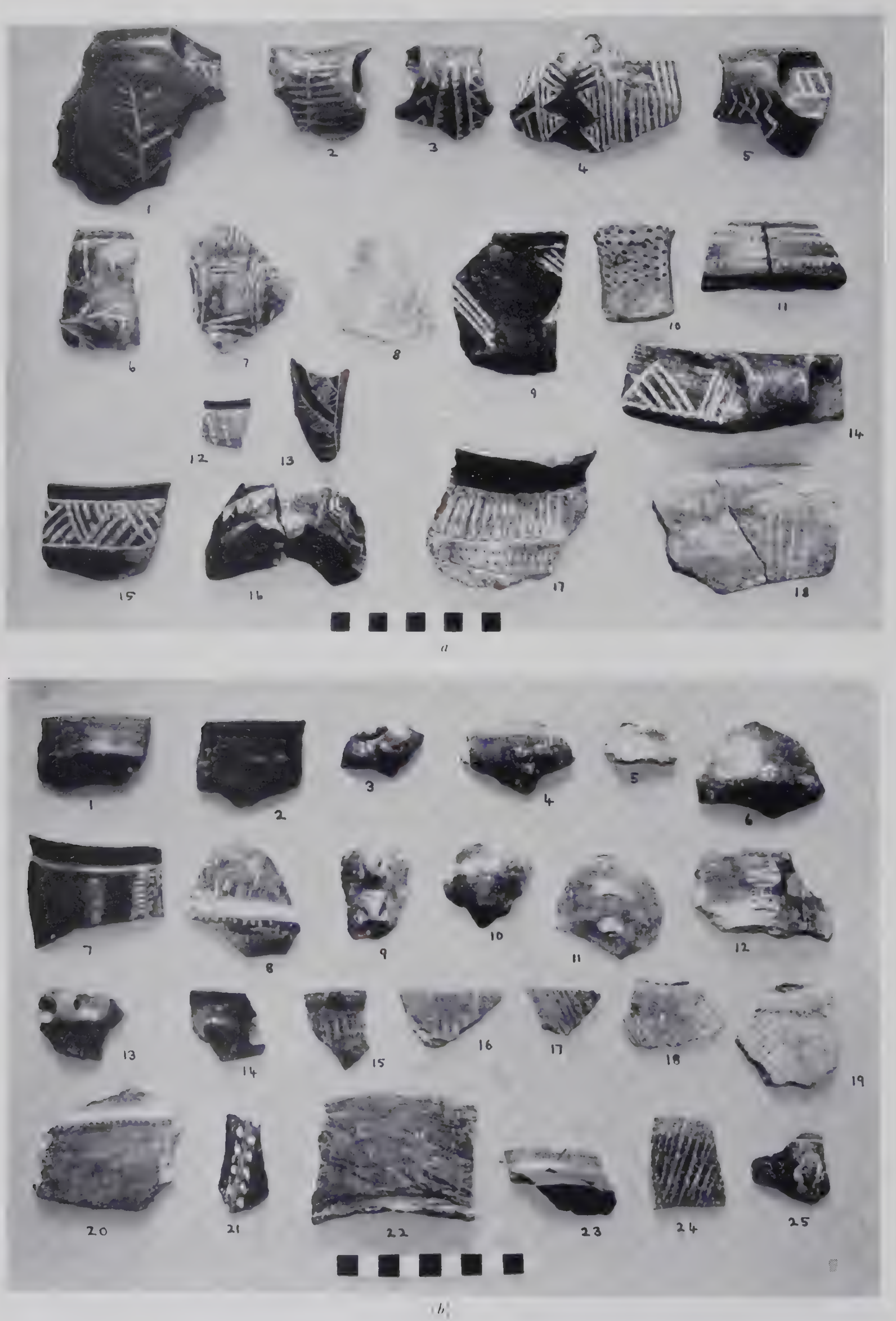
b

KNOSSOS, NEOLITHIC POTTERY. (*a*) STRAP HANDLES AND LUGS. (*b*) E.N. I SHERDS WITH PLASTIC ORNAMENT.



KNOSSOS, NEOLITHIC POTTERY. (*a*) *Pointillé* Incision and Plastic Ornament. (*b*) *Pointillé* Incised Ornament. (*c*) E.N. I Bowl Incised in *Pointillé* Style.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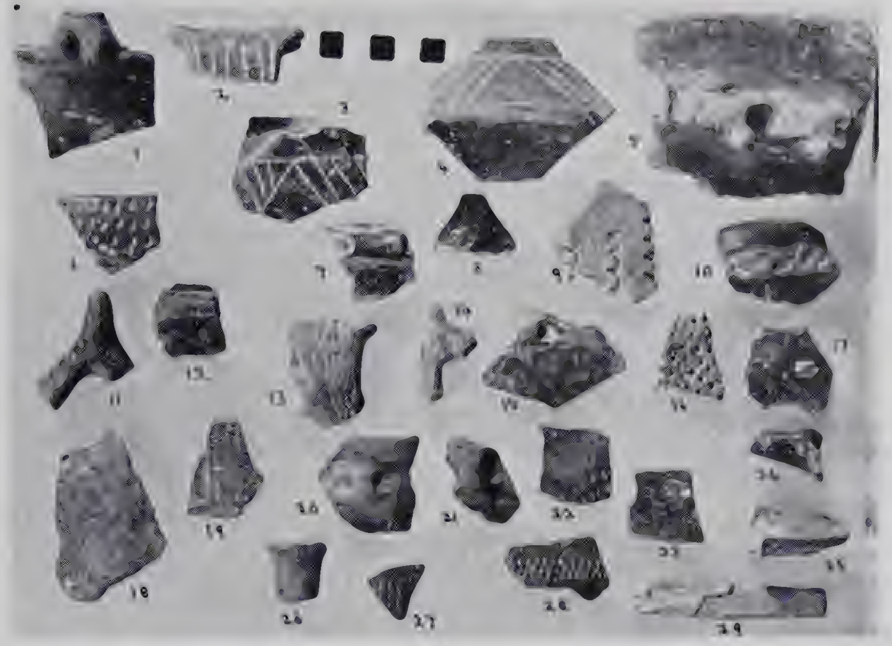
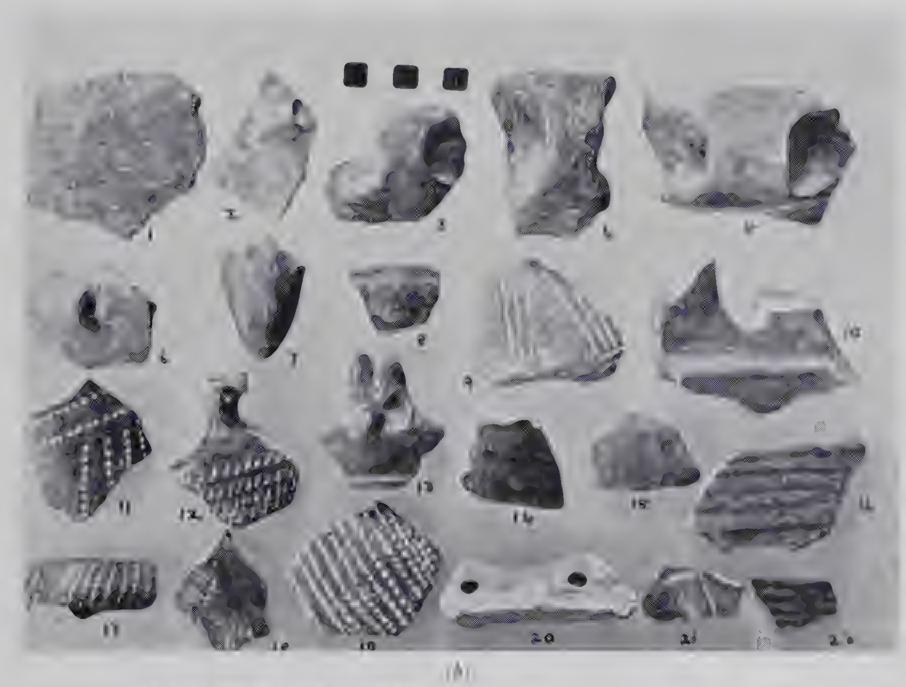
b

KNOSSOS, NEOLITHIC POTTERY. (*a*) Incised Sherds, E.N. II and Later. (*b*) Pellet Ornament, Pattern Burnish, Grooving, Rippling, etc.

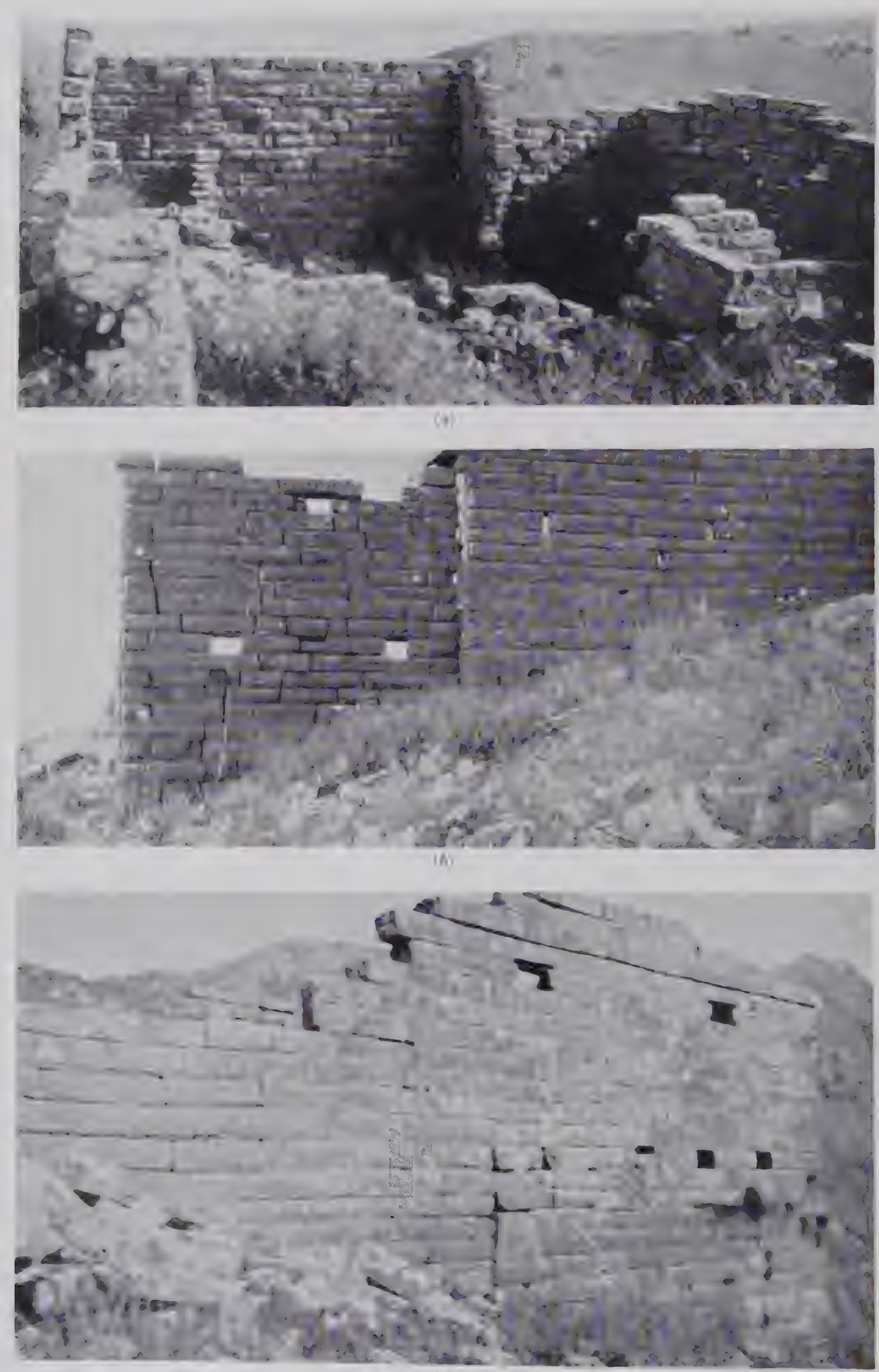


(a)

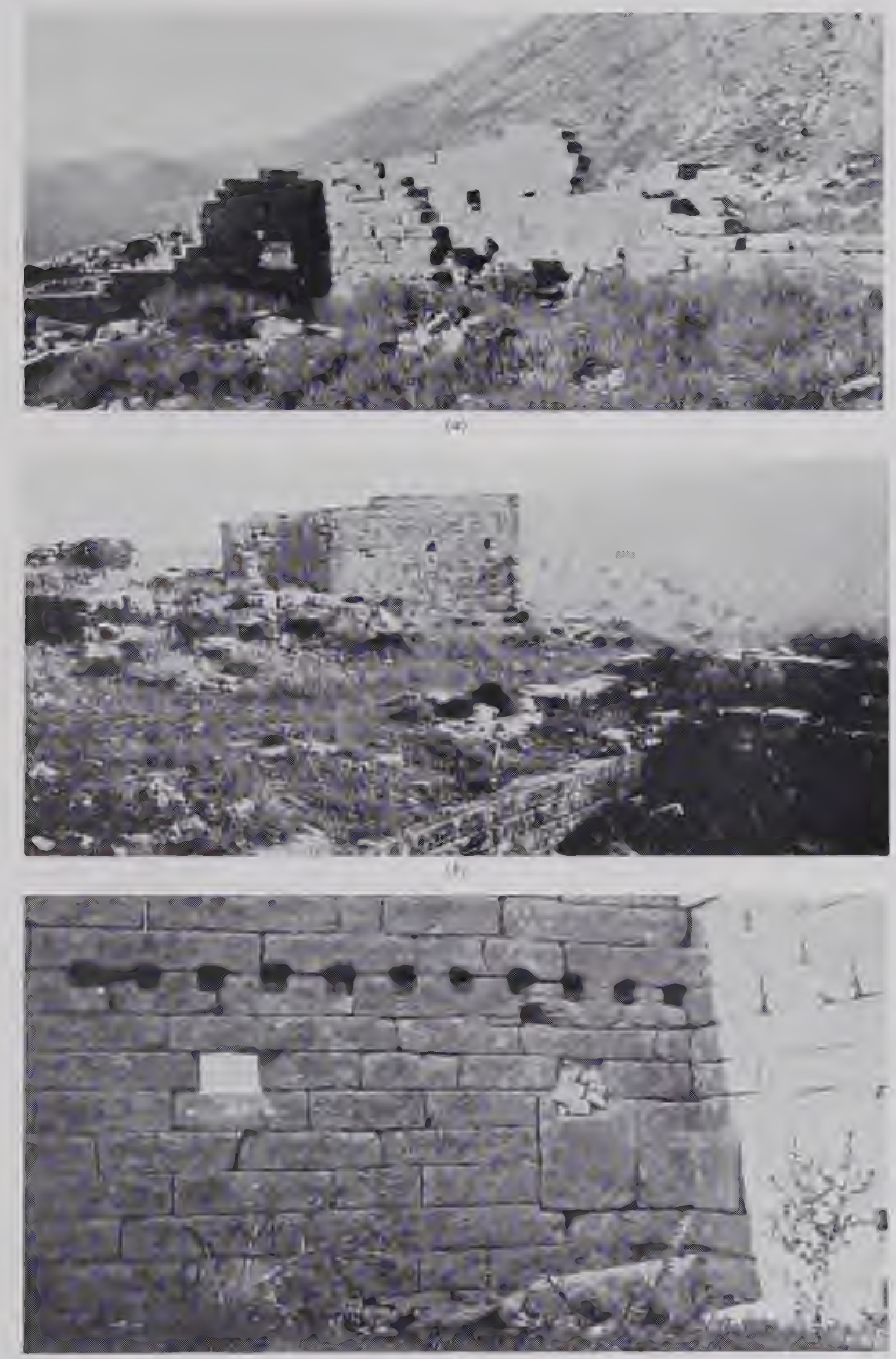


(b)

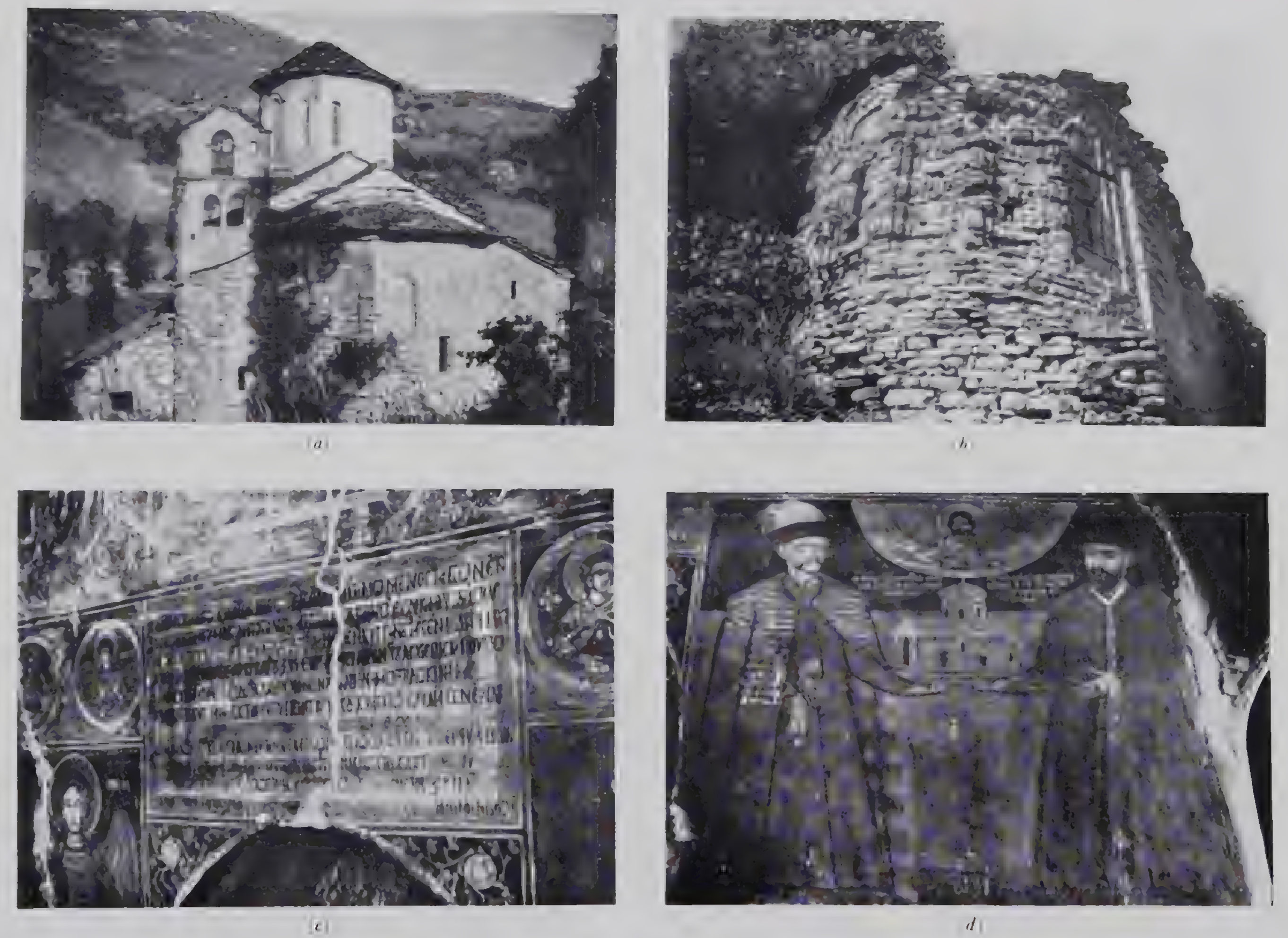
KNOSSOS, NEOLITHIC POTTERY. (*a*) L.N. SHERDS FROM BENEATH THE CENTRAL COURT. (*b*) L.N. HANDLES AND DECORATED PIECES



AMMOTOPOS, HOUSE A. (*a*) SOUTH AND WEST WALLS FROM INSIDE. (*b*) SOUTH WALL FROM OUTSIDE. (*c*) WEST WALL FROM OUTSIDE

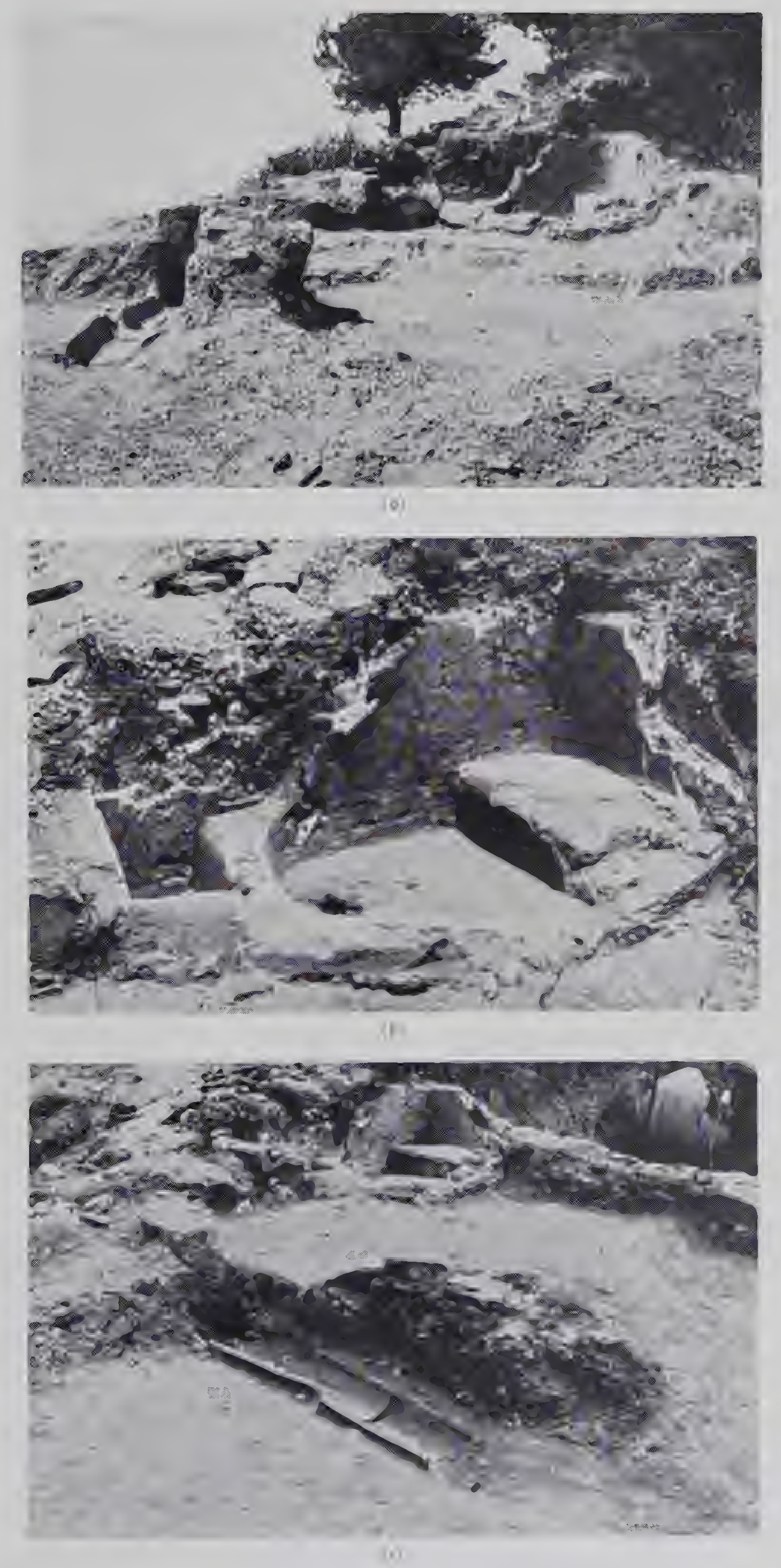


AMMÓTOPOS. (*a*) Houses B and C. (*b*) House D and Buildings. (*c*) House D. East and South Walls from Inside.

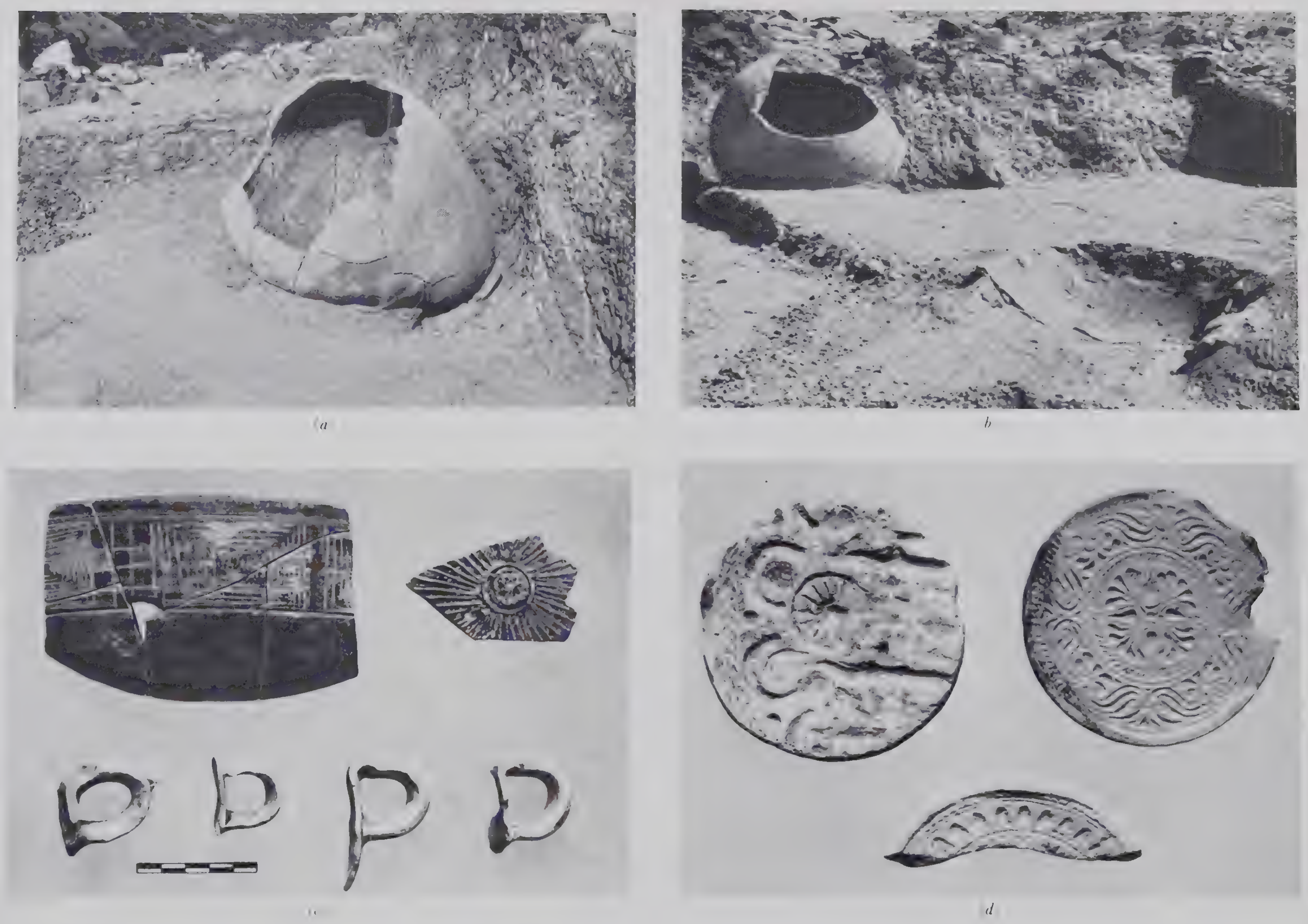


(a) (b) (c) (d)

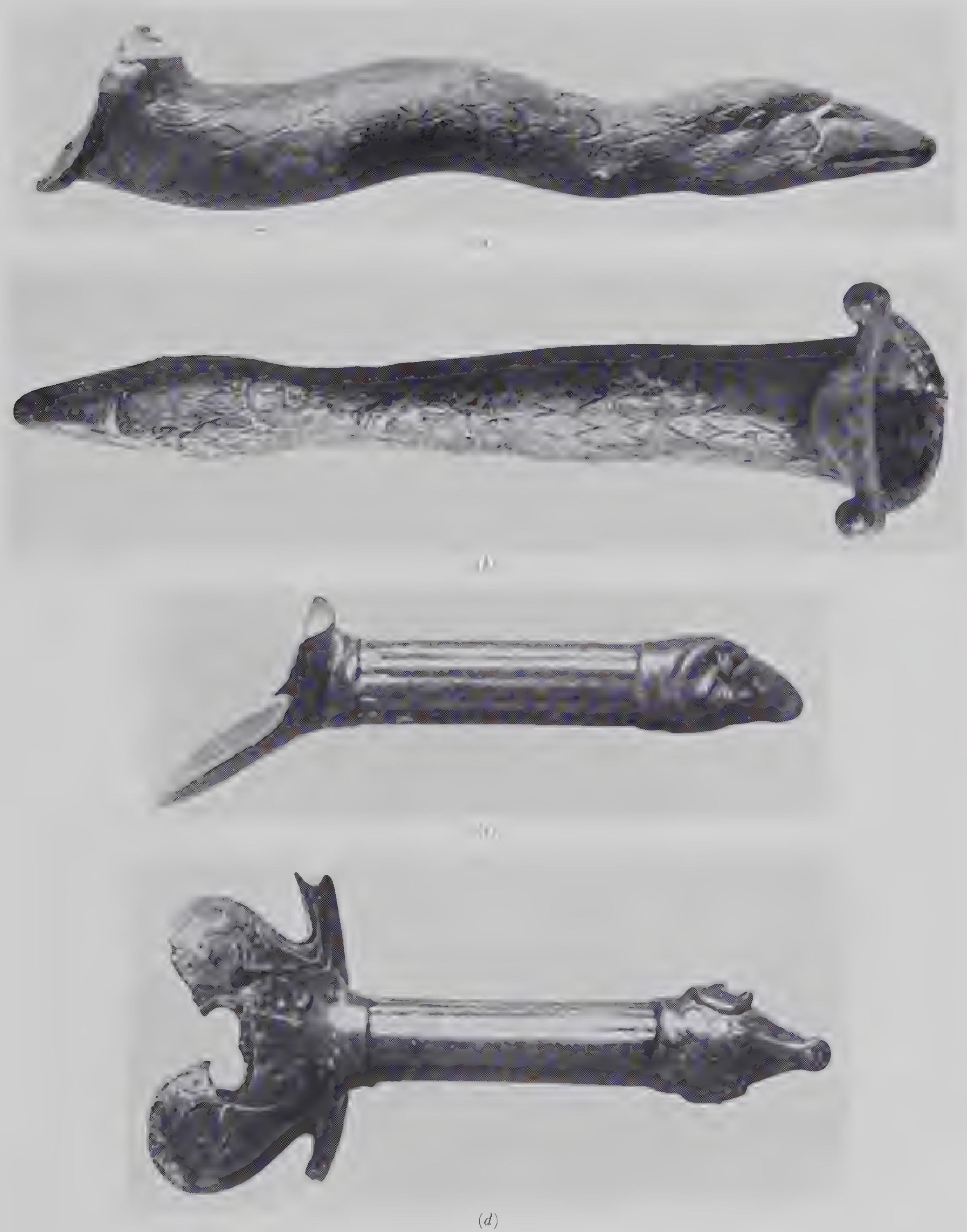
MOLYVDOSKEPASTOS. (*a*), (*c*), (*d*) CHURCH OF THE HOLY APOSTLES. (*a*) FROM THE EAST. (*c*) INSCRIPTION OVER WEST DOOR OF NAVE. (*d*) PORTRAITS OF BENEFACTORS. (*b*) CHURCH OF ST. DEMETRIOS. APSE.



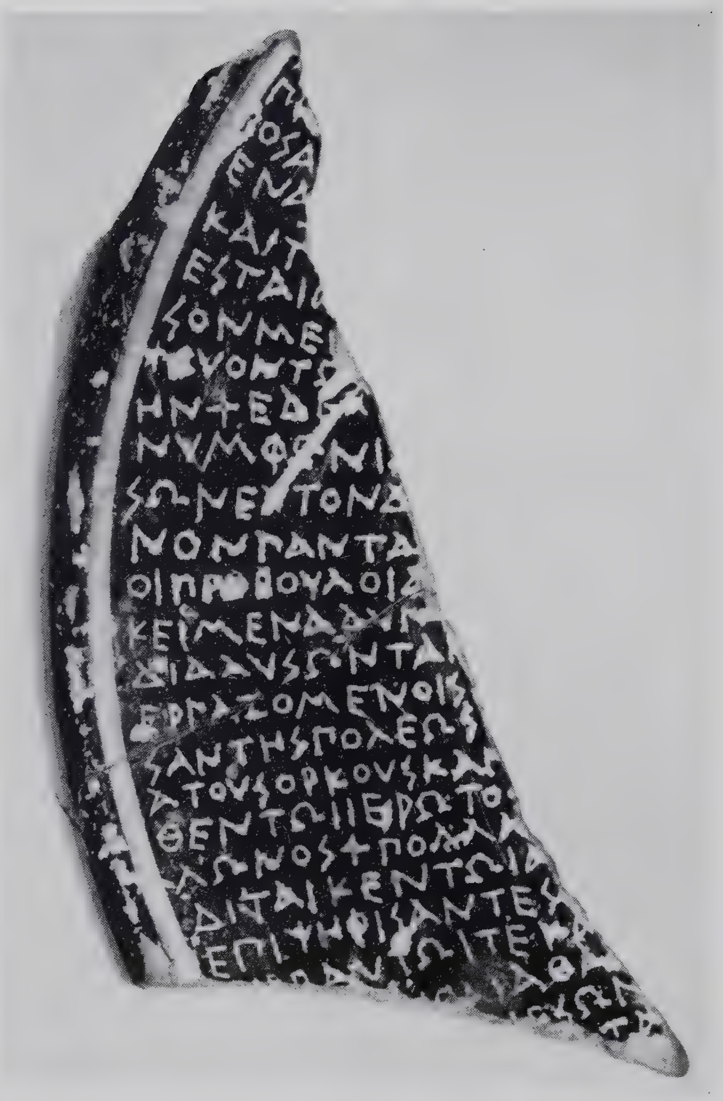
MAMOUSIA. (*a*) THE BATHROOM FROM THE SOUTH. (*b*) THE BATH FROM THE SOUTH. (*c*) THE BATHROOM FROM THE SOUTH-WEST.



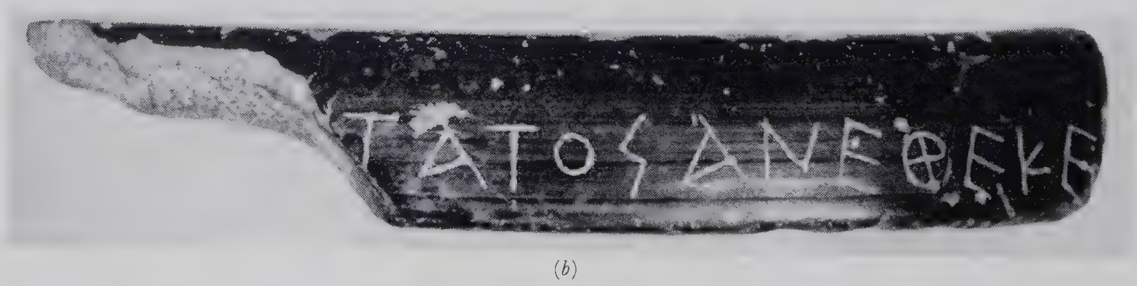
MAMOUSIA. (*a*), (*b*) STOREROOM FROM EAST AND SOUTH-WEST. (*c*) FRAGMENTS OF DECORATED POTTERY. (*d*) CAKE STAMPS (41, 43 (FRAGMENT)) AND STAMP PURCHASED LOCALLY. (TOP OF 41 ON LEFT OF PHOTOGRAPH.)



MAMOUSIA. BRONZE HANDLES. (SCALE: (*a*), (*b*), 5 : 6; (*c*), (*d*), 4 : 5.)



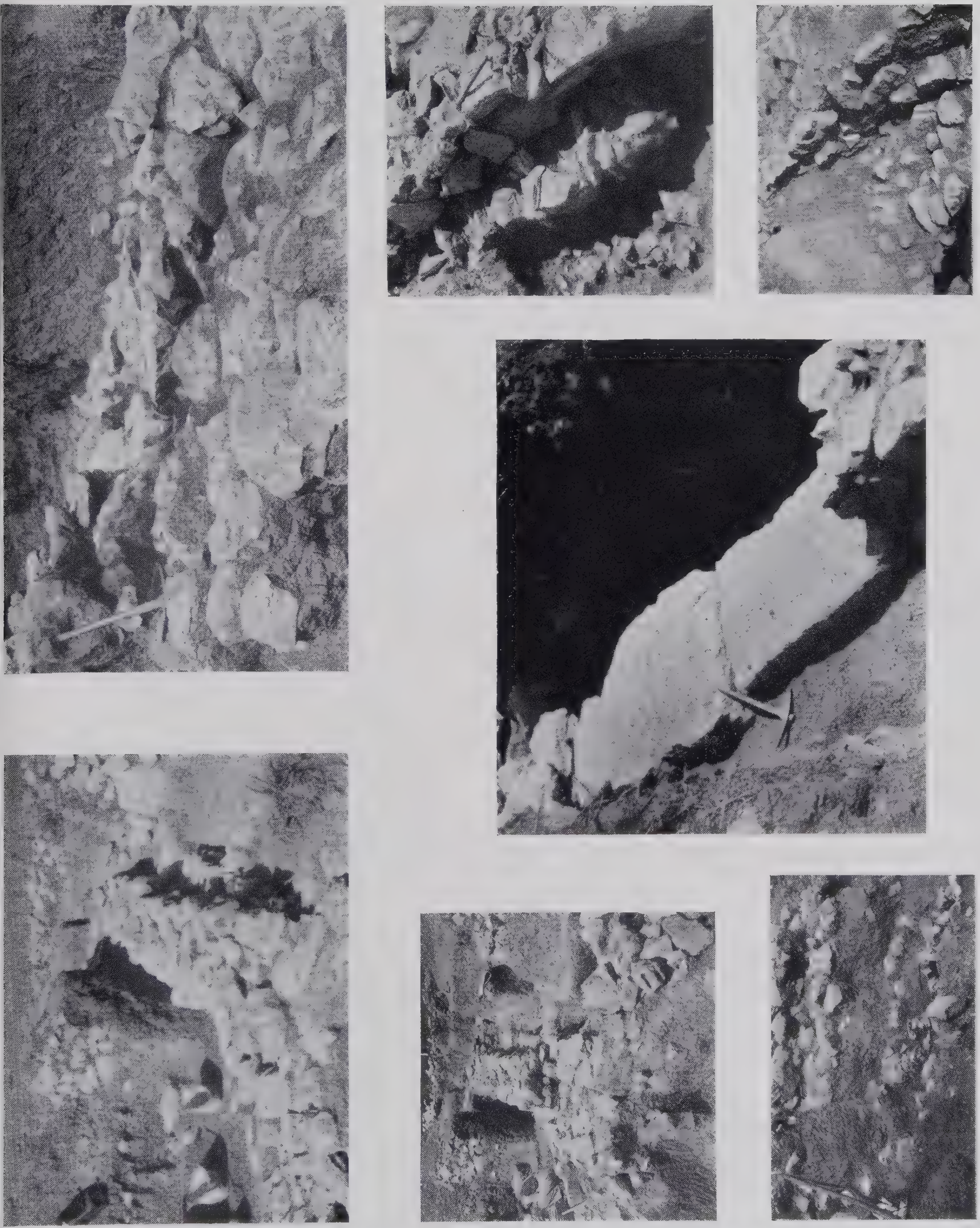
(*a*)


ΤΑΤΟΣΑΝΕΘΕΚΕ

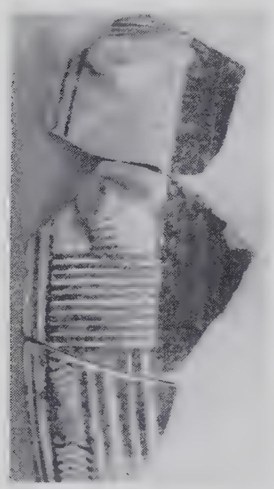
(*b*)

A POLITICAL SHERD.

(*a*) Upper Surface; (*b*) Dedication on Rim. (Slightly Larger than Actual Size.)



WALLS OF SHRINE AND AGORA AT AETOS, ITHACA.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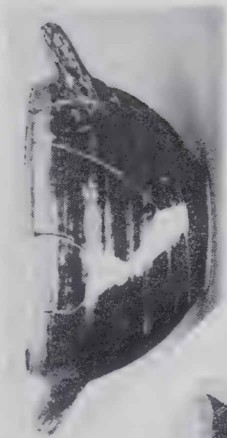
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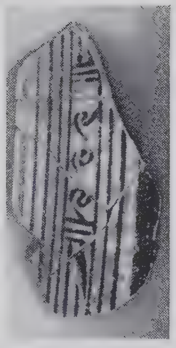
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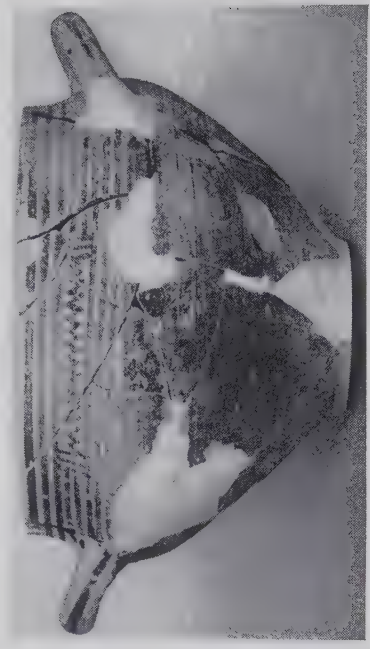
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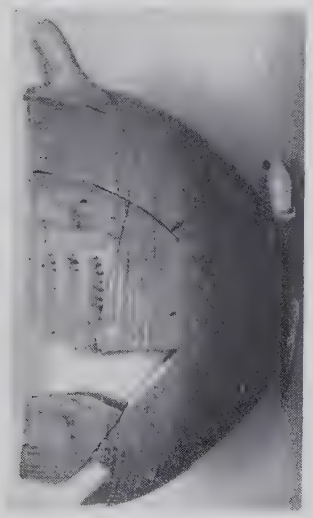
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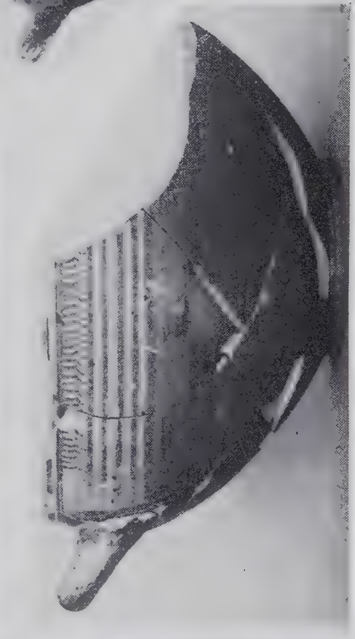
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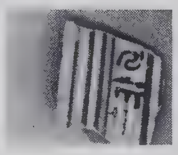
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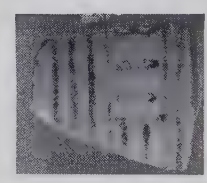
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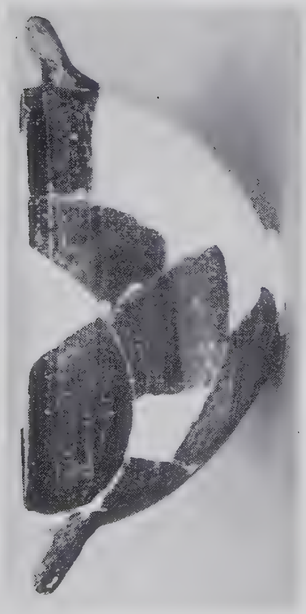
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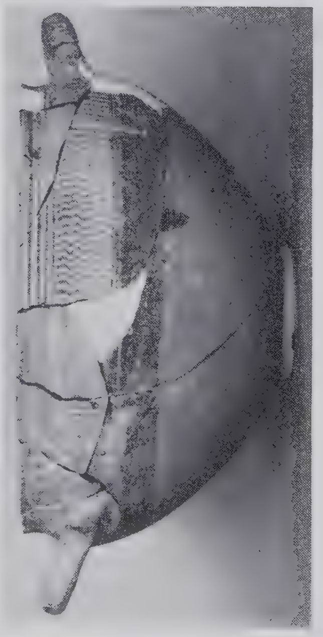
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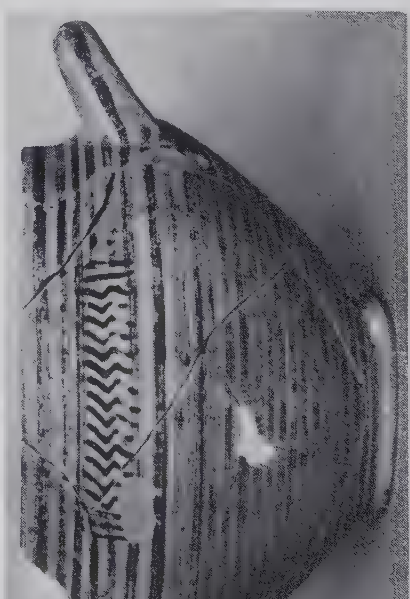
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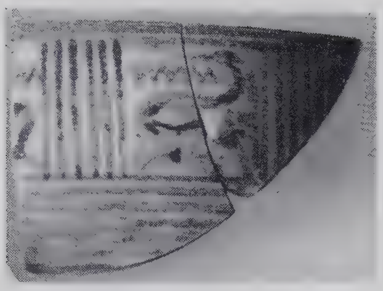
CUPS FROM AETOS, ITHACA.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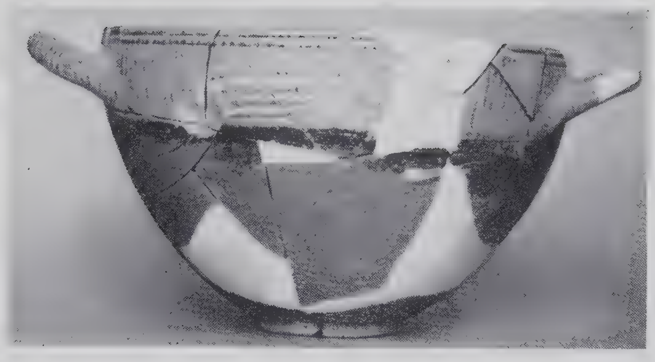
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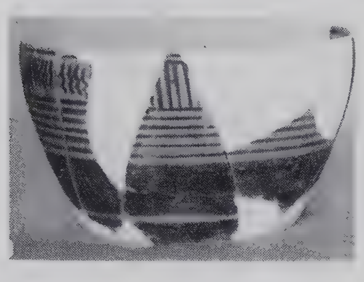
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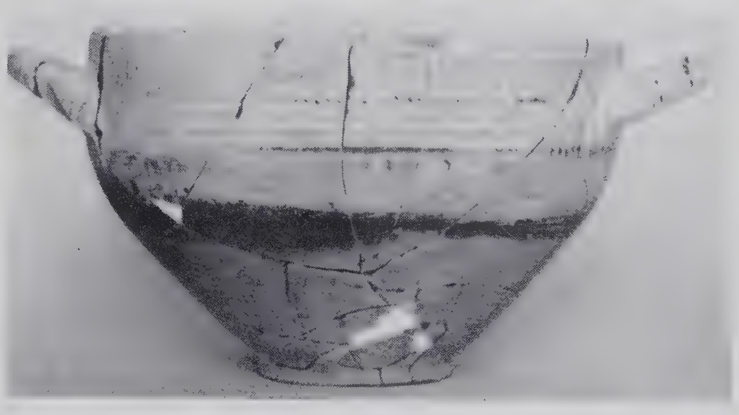
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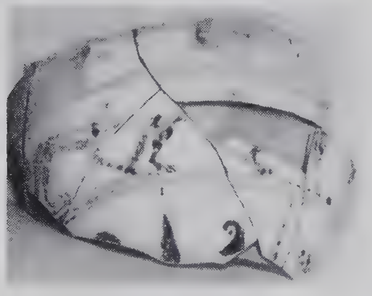
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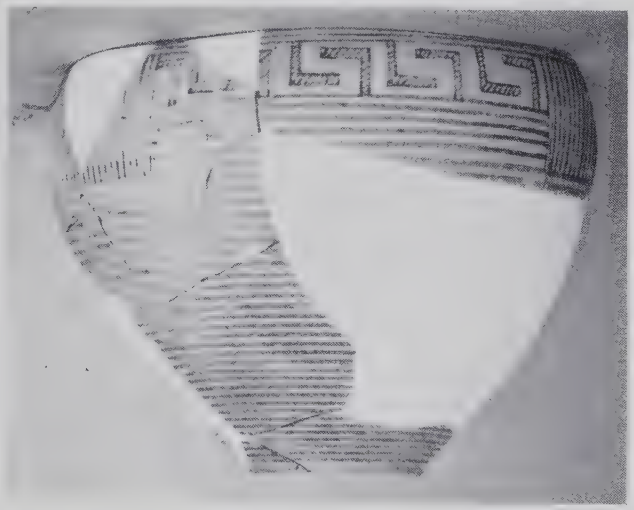
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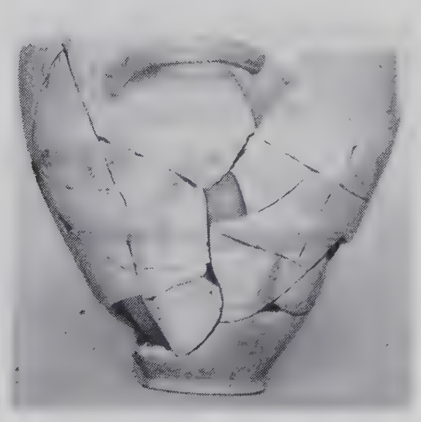
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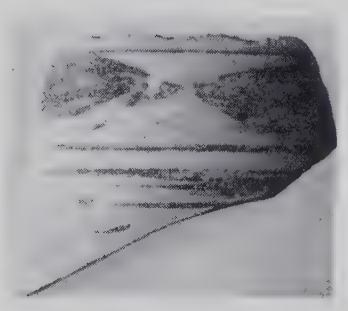
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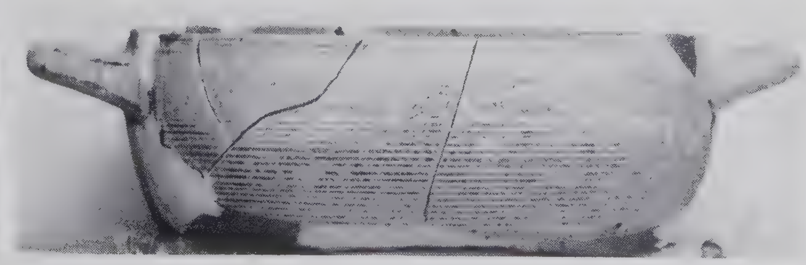
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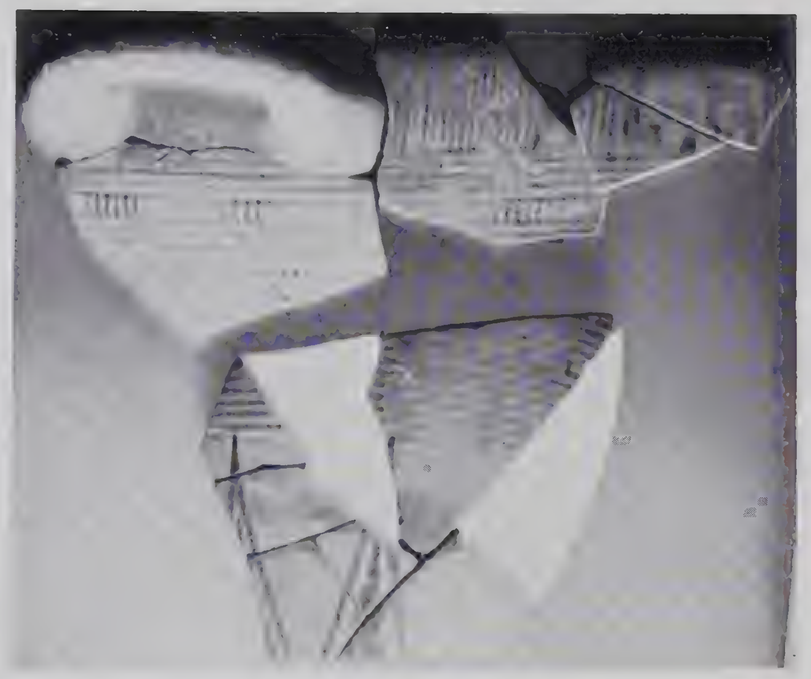
KOTYLAI FROM AETOS, ITHACA.



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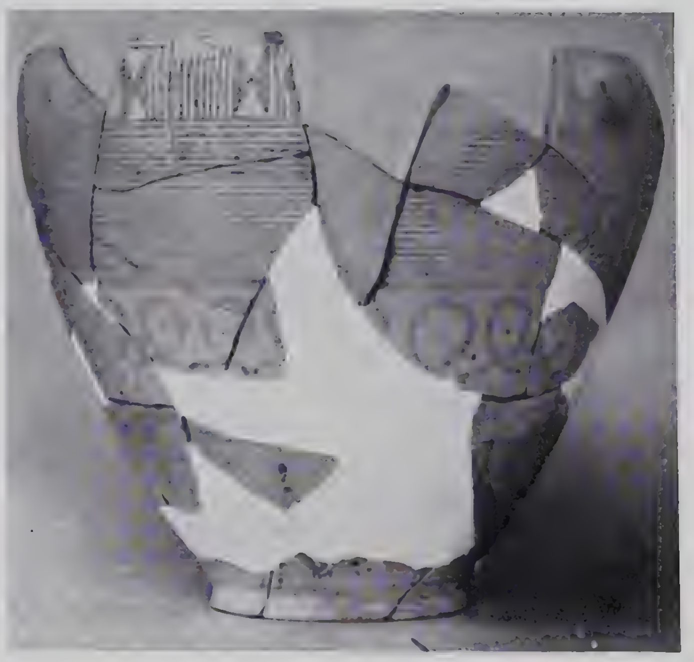

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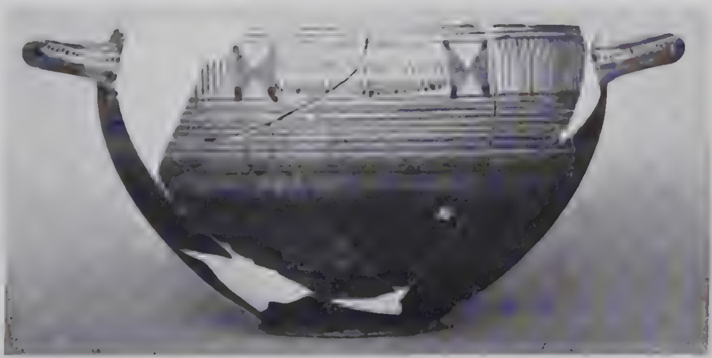

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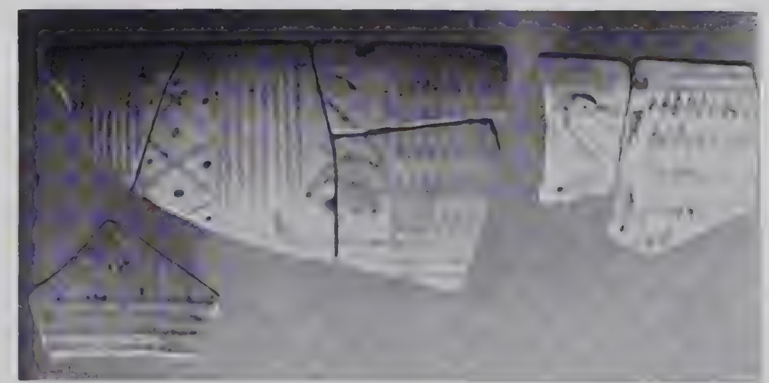

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KOTYLAI FROM AETOS, ITHACA.

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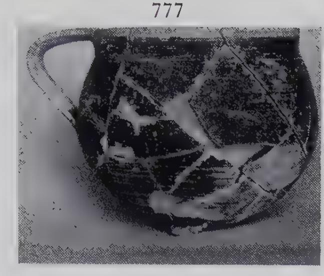

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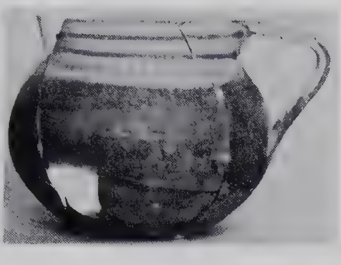

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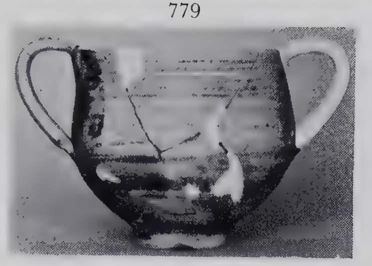

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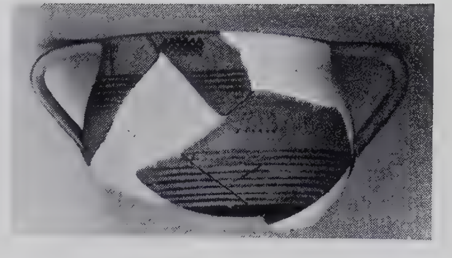

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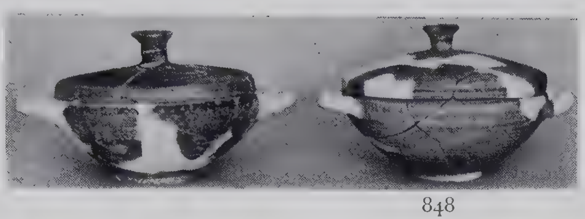

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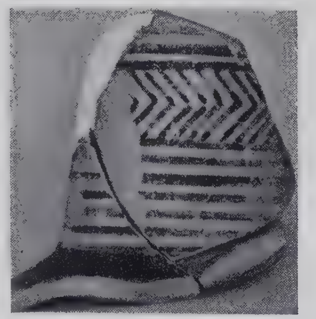

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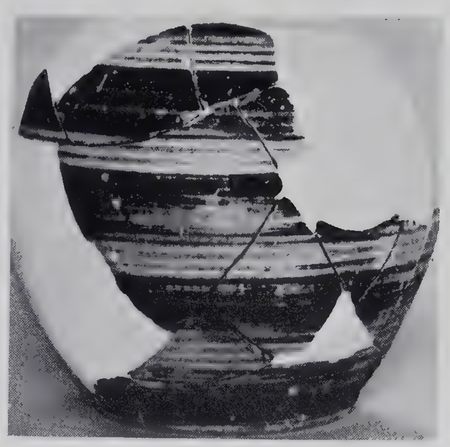

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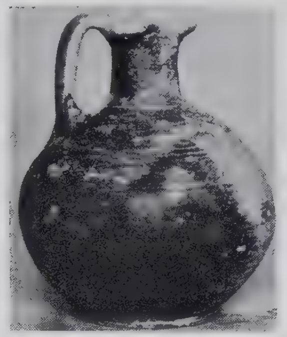

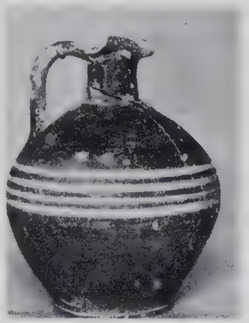

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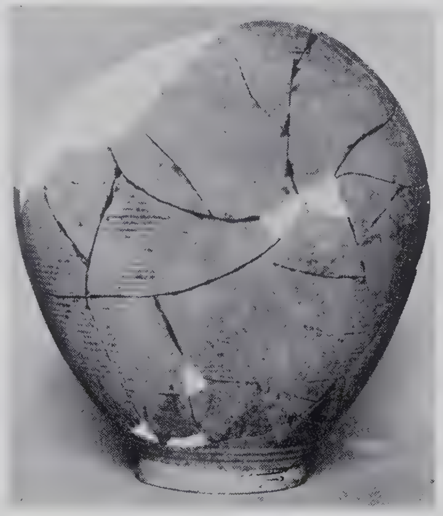

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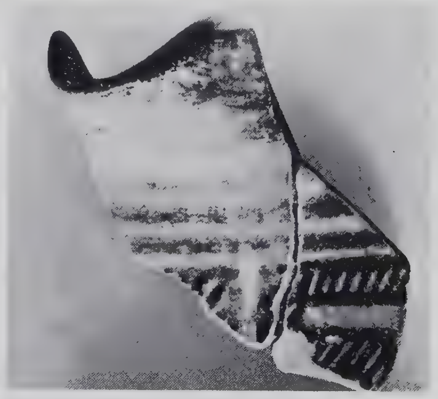

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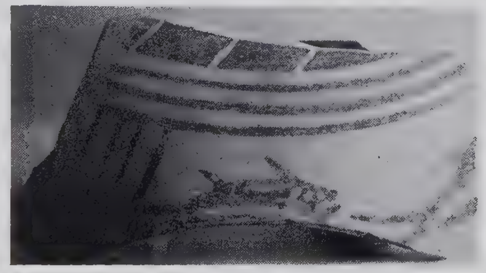

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VASES FROM AETOS, ITHACA.

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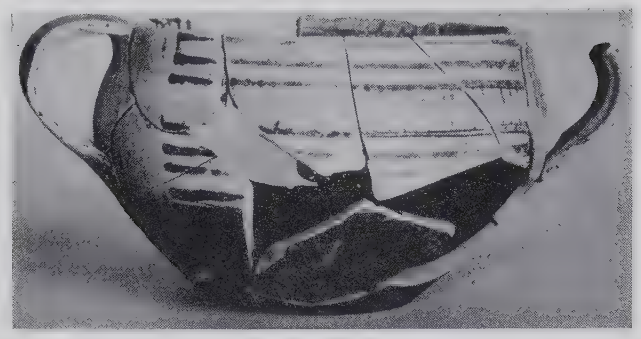

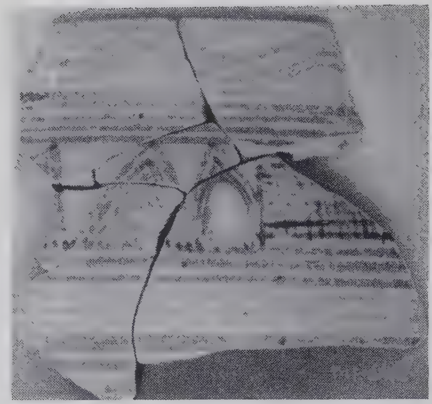

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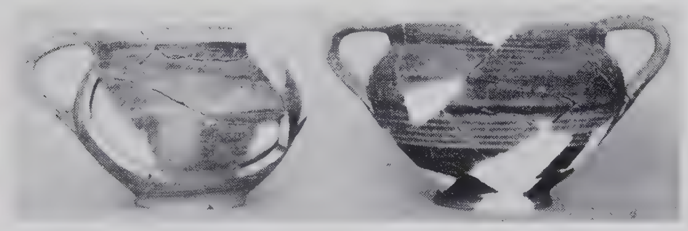

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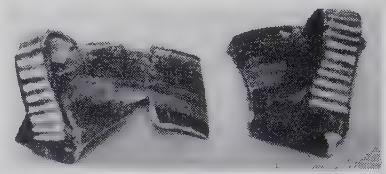

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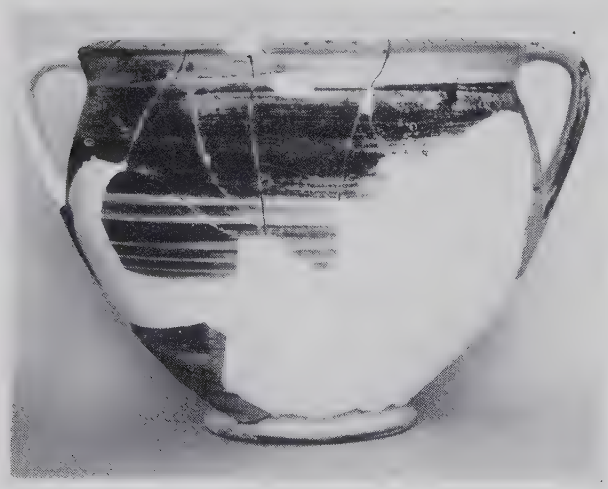

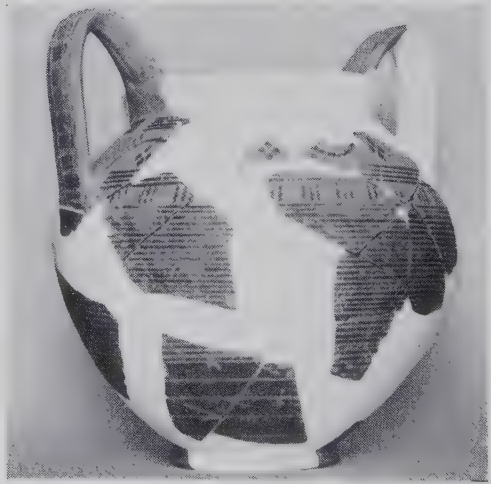

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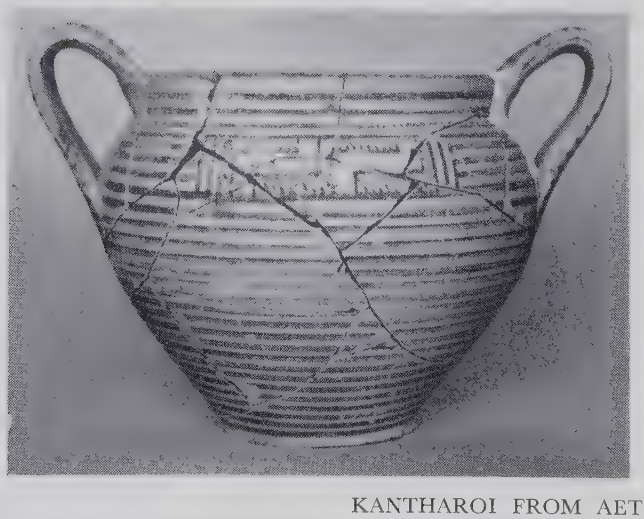

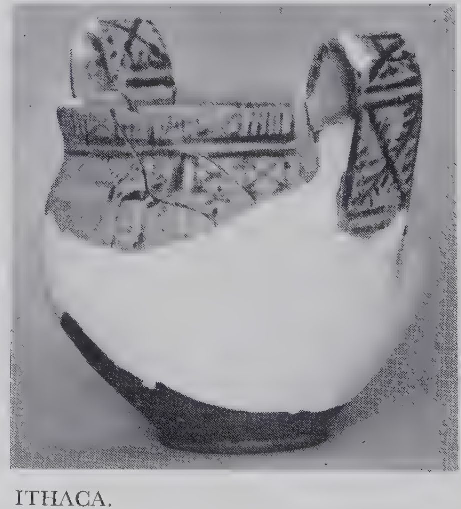

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KANTHAROI FROM AETOS, ITHACA.

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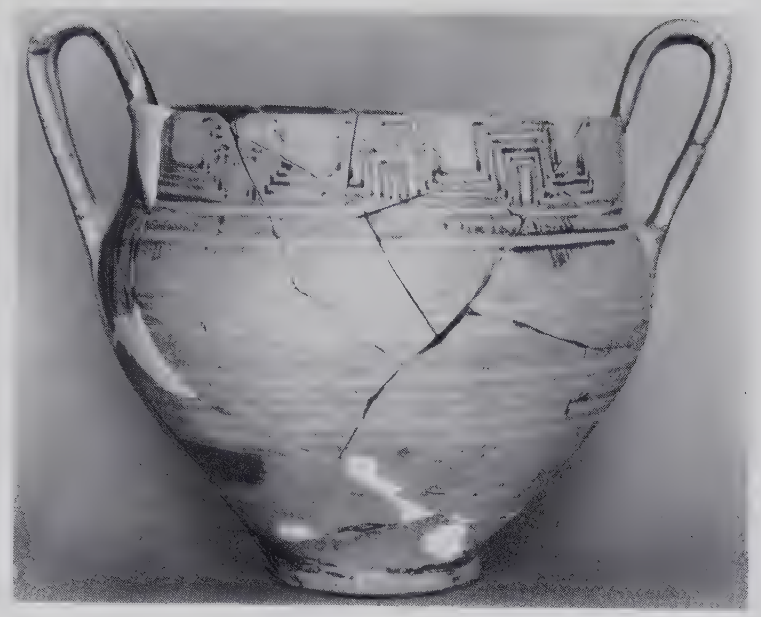

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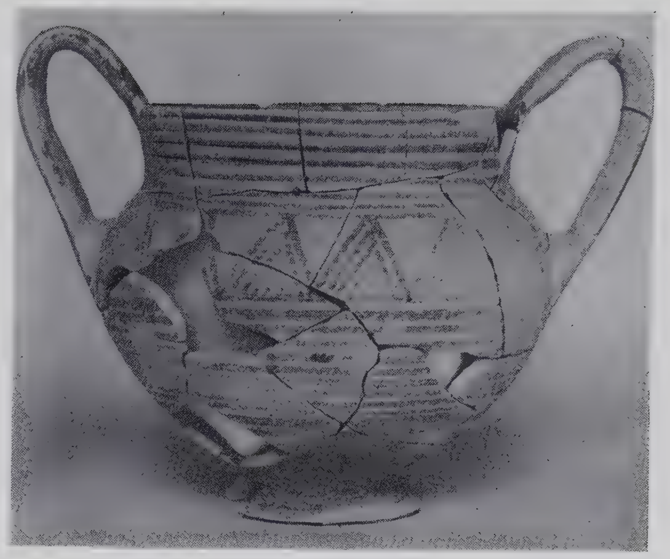

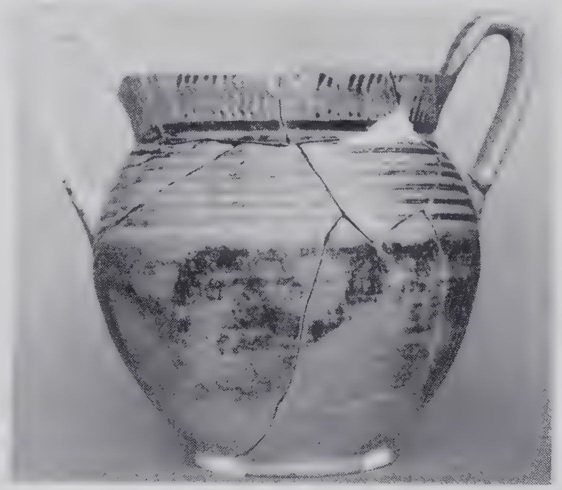

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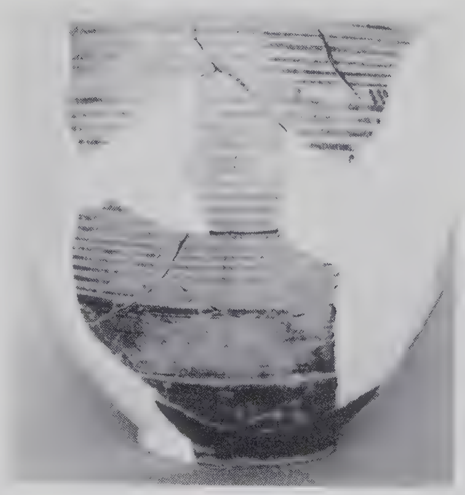

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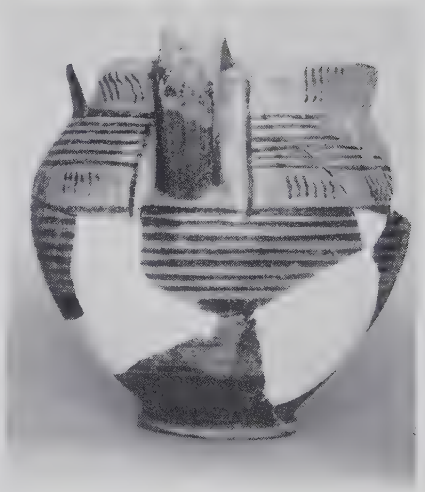

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GEOMETRIC KANTHAROI FROM AETOS, ITHACA.

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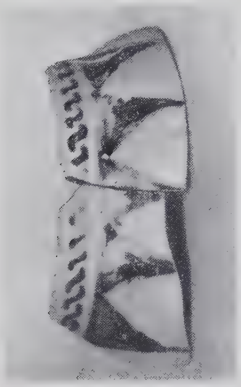

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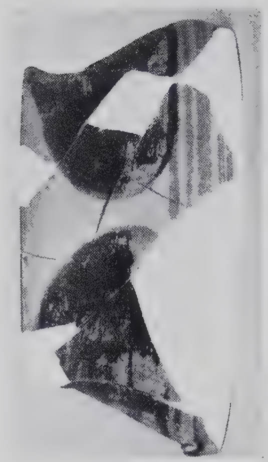

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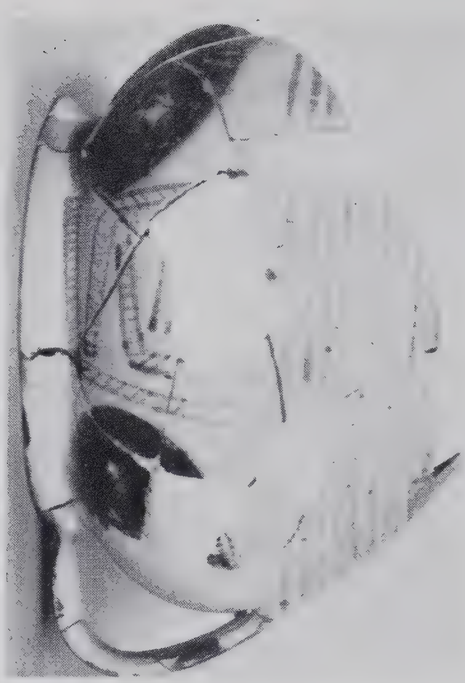

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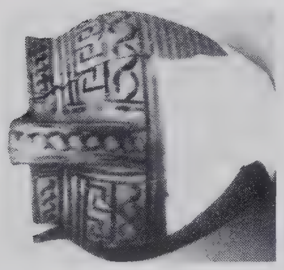

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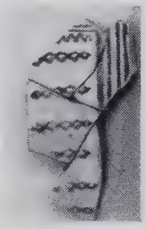

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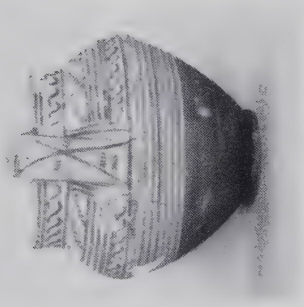

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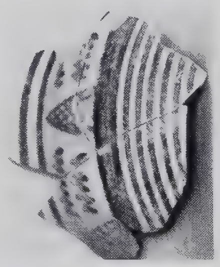

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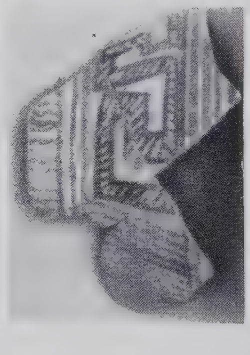

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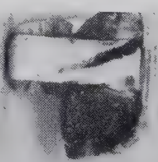

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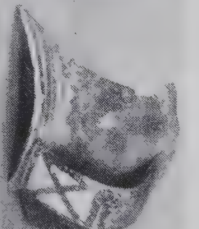

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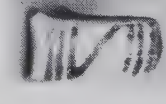

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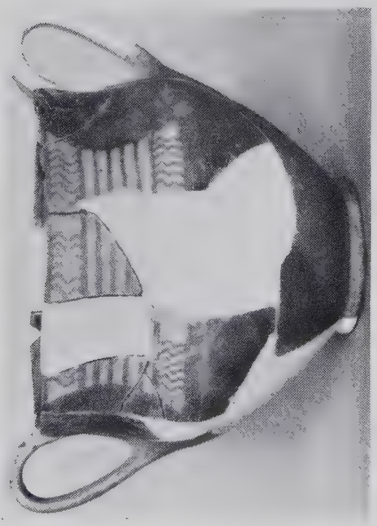

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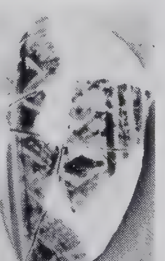

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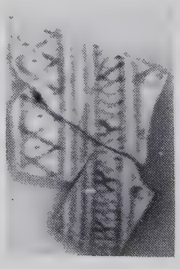

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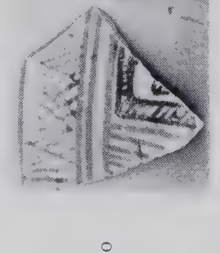

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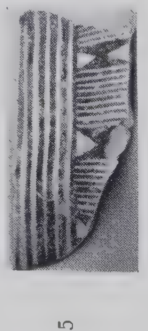

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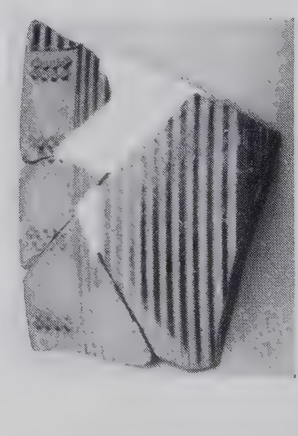
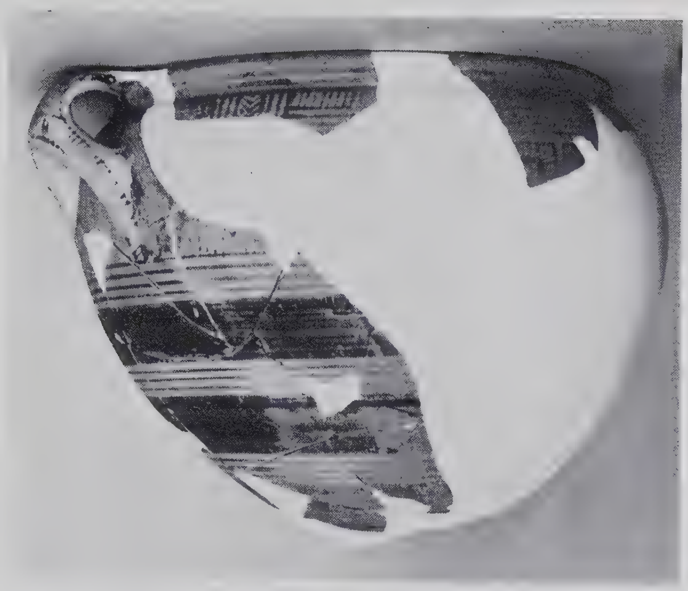


KANTHAROI FROM AETOS, ITHACA.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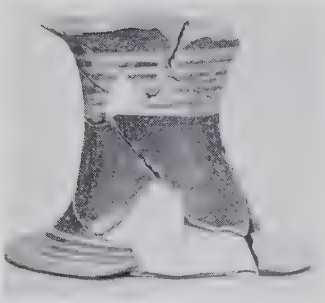
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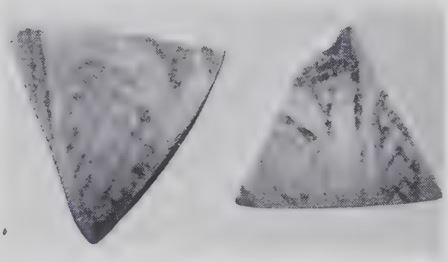
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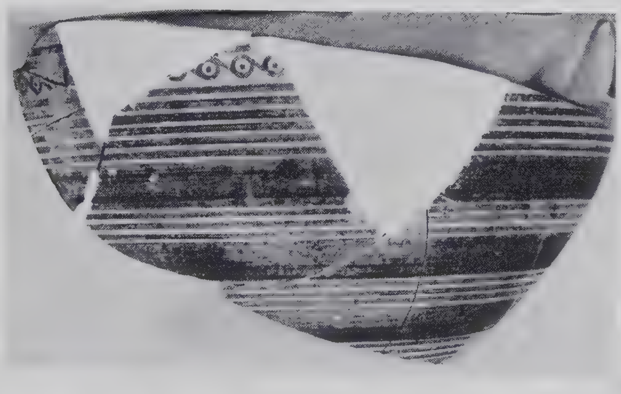
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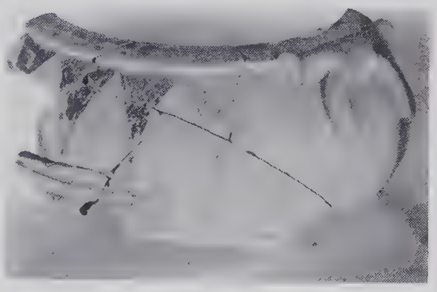
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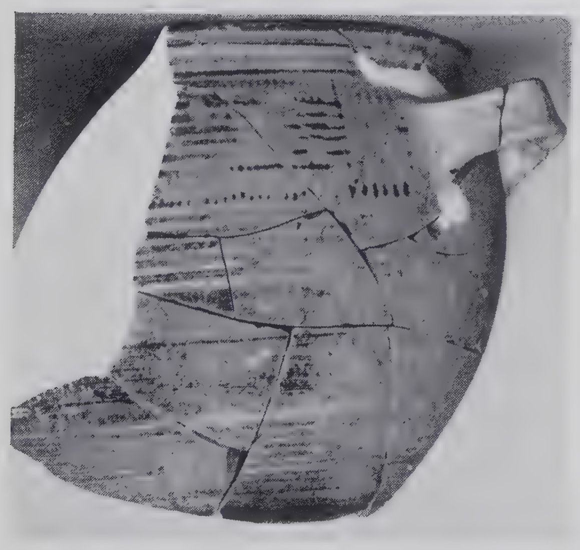
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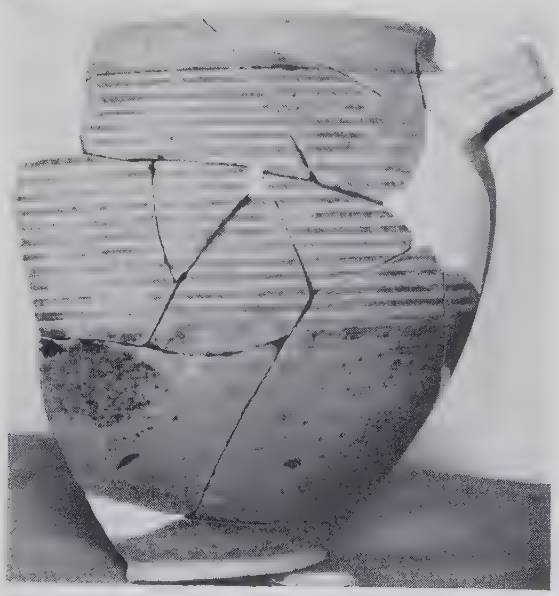
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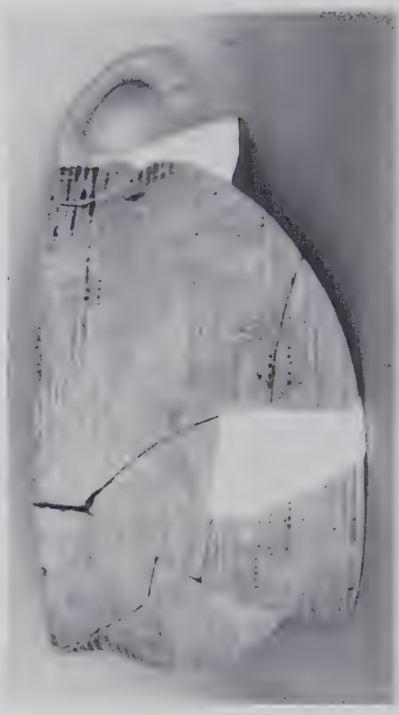

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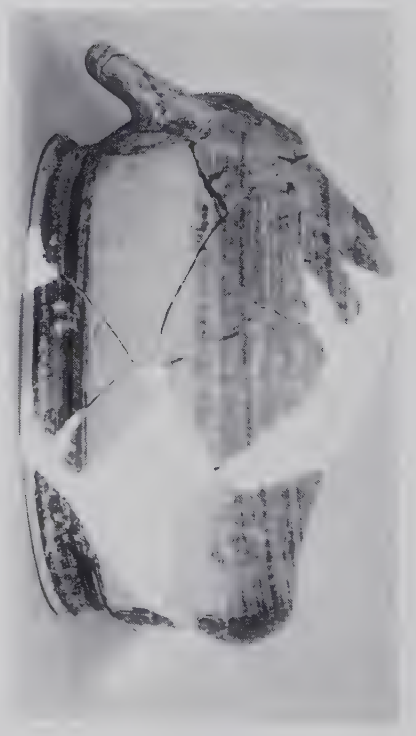

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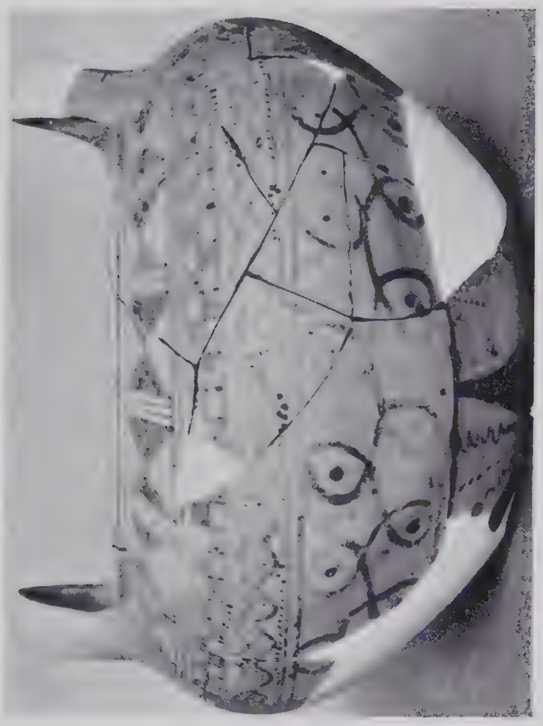

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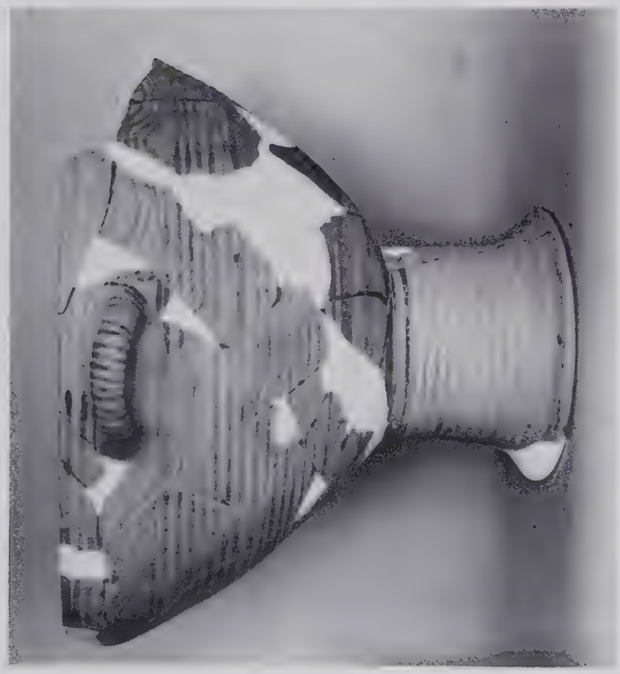

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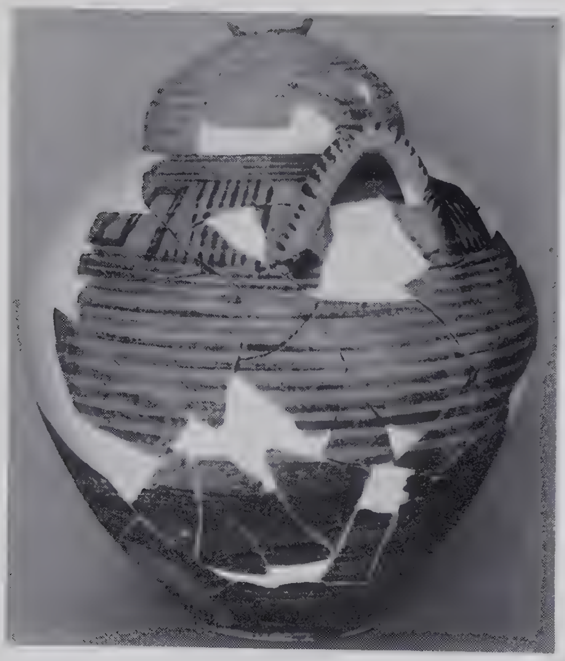

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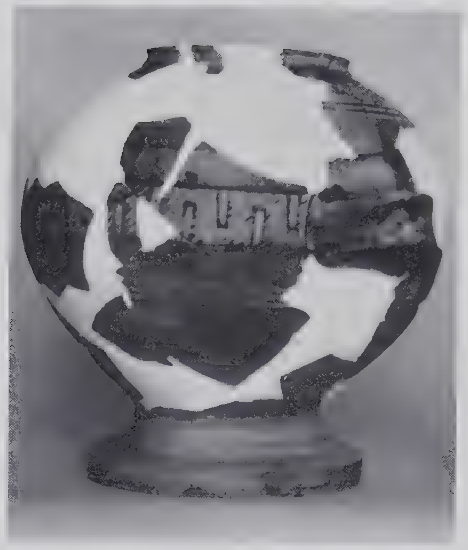

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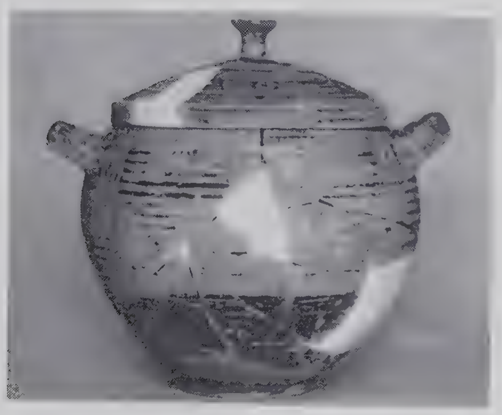

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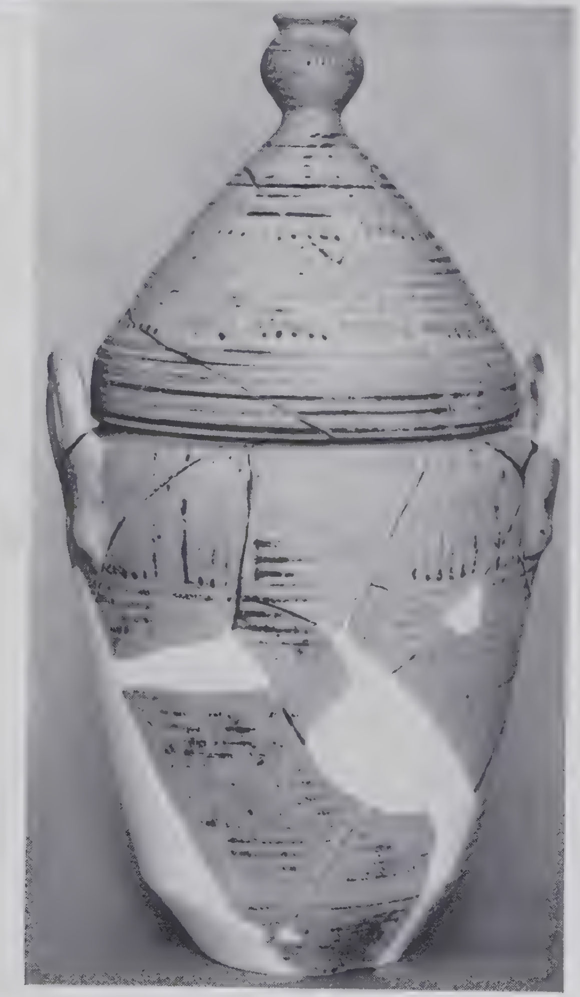

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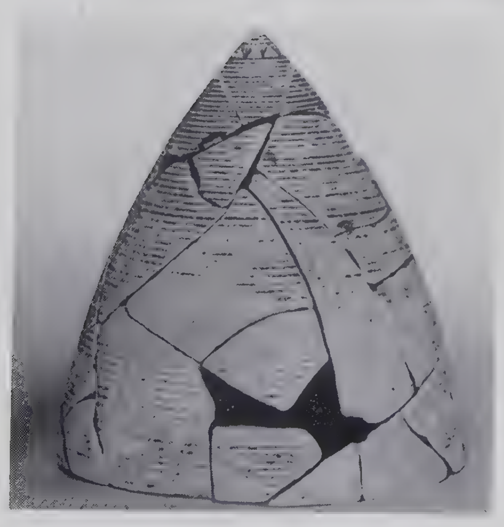

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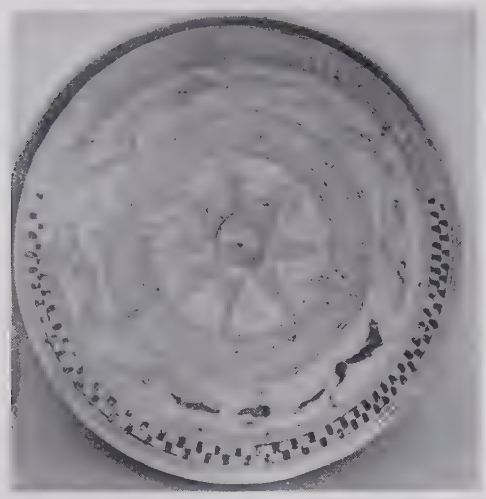
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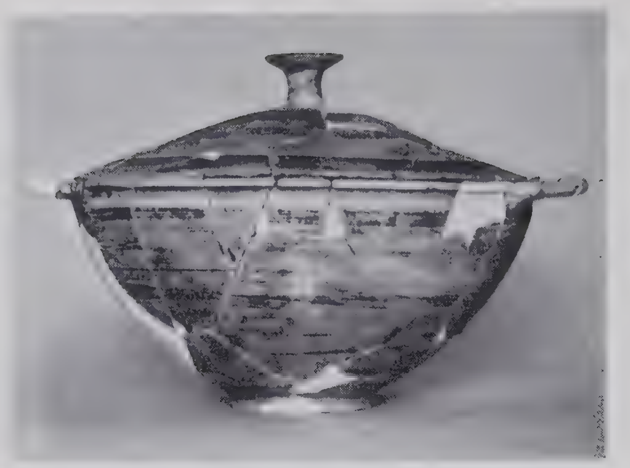
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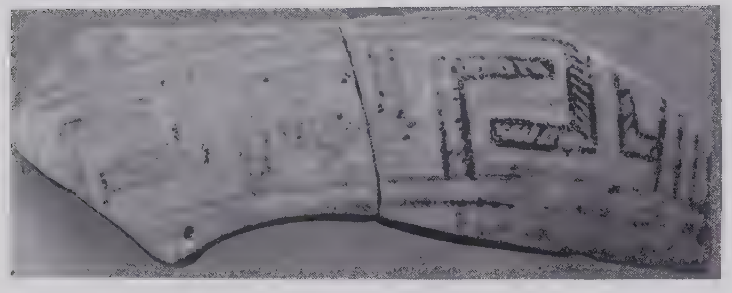
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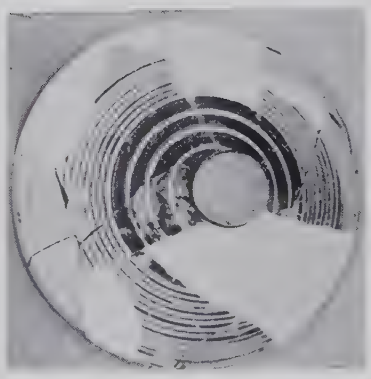
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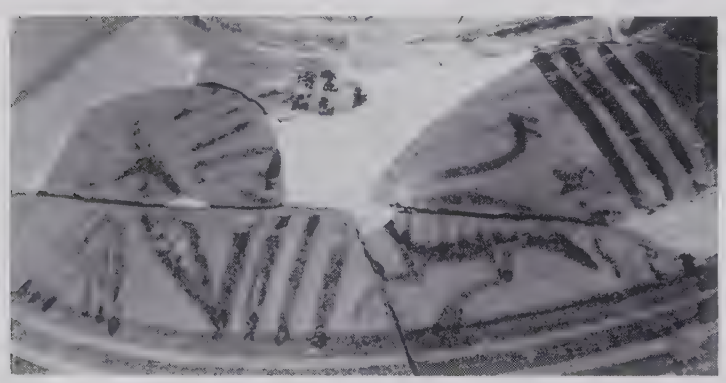
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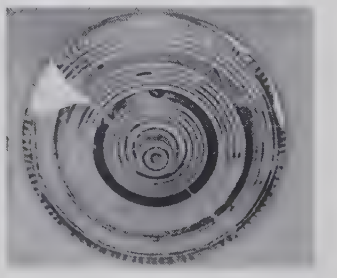
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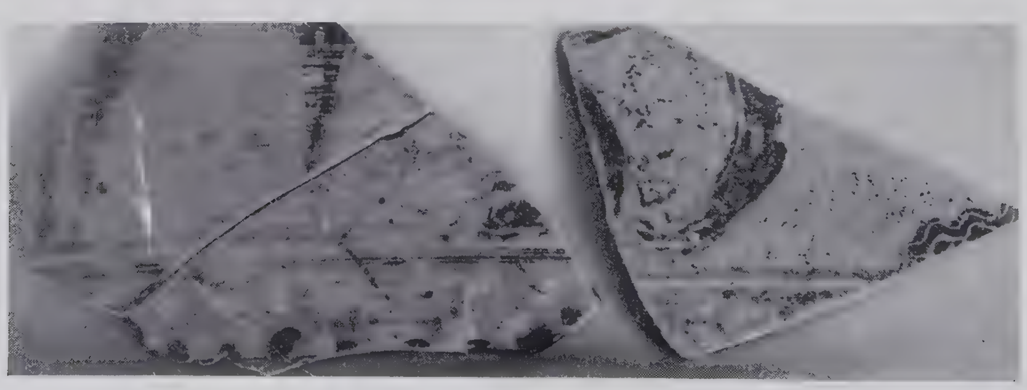
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LIDS, ETC. FROM AETOS, ITHACA.

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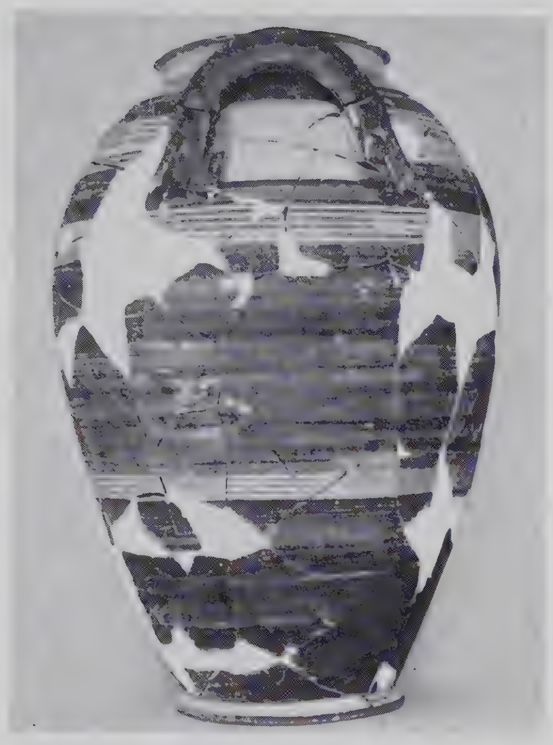

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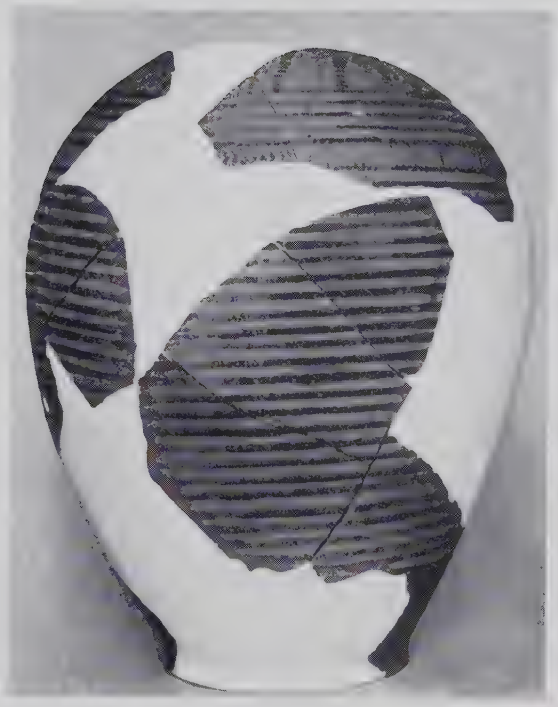

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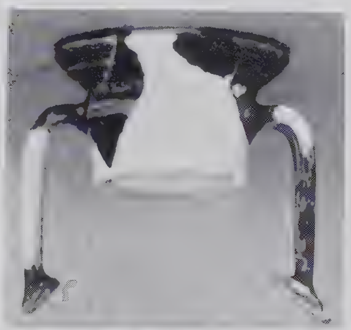

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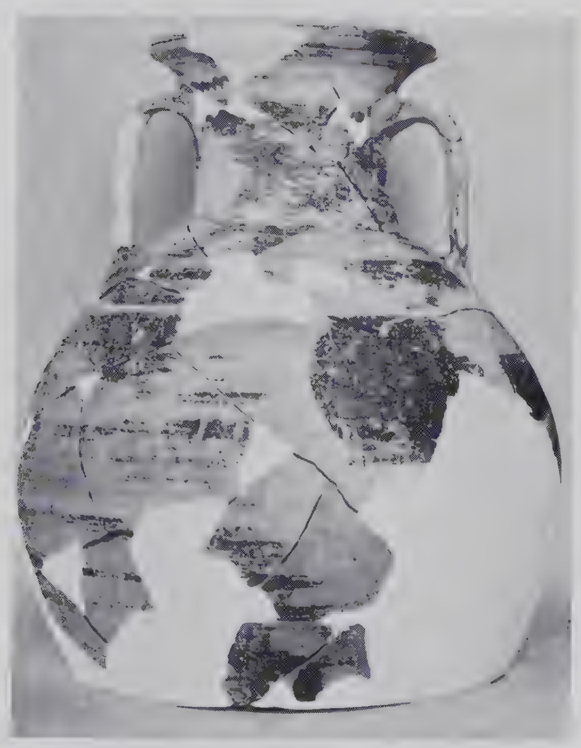

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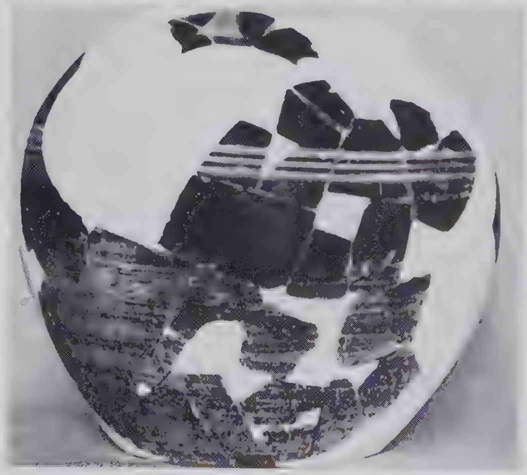
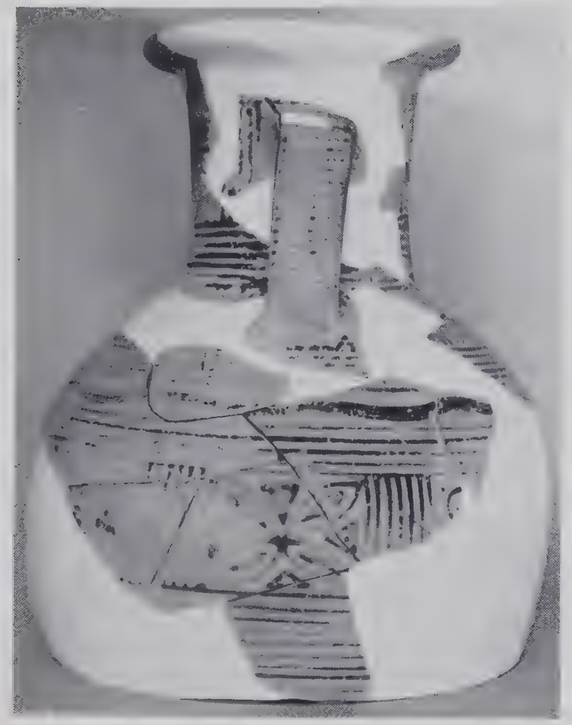


CLOSED GEOMETRIC VASES FROM AETOS, ITHACA.



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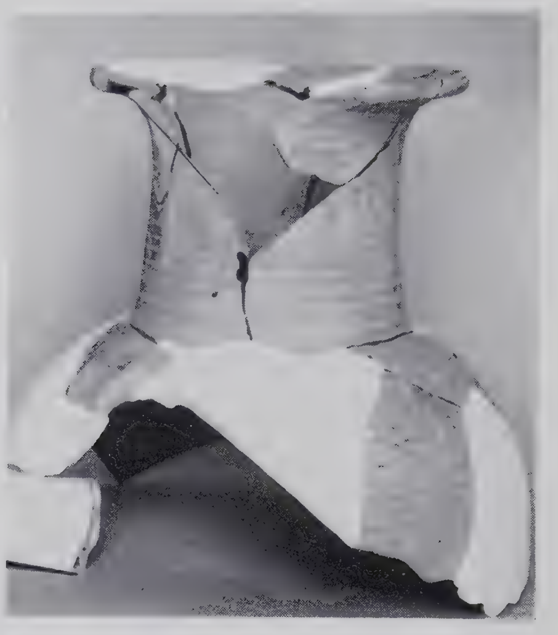

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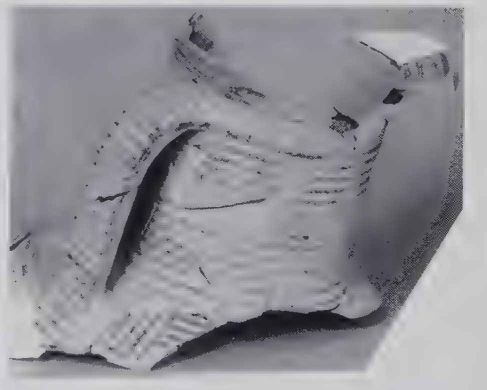

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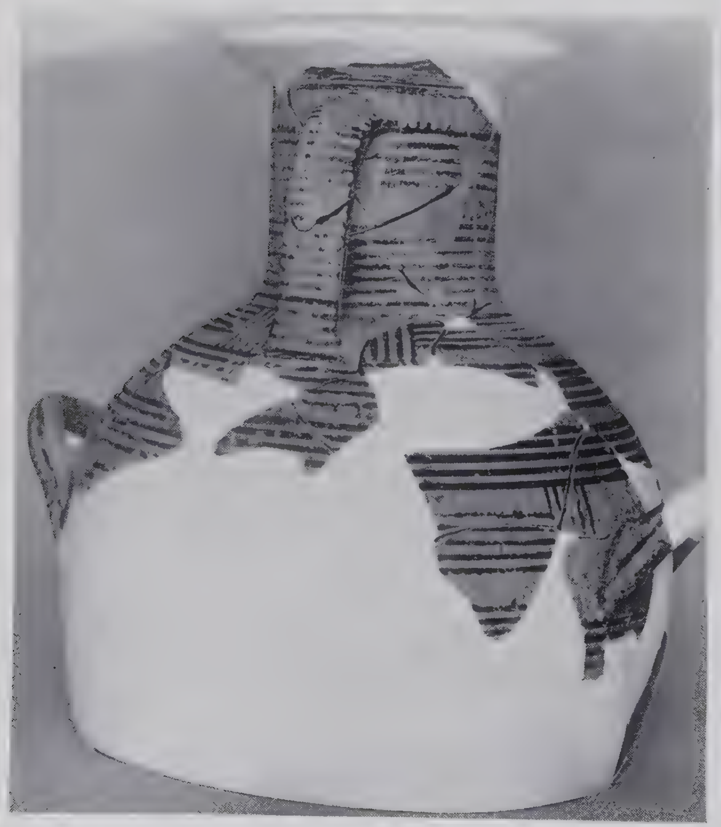

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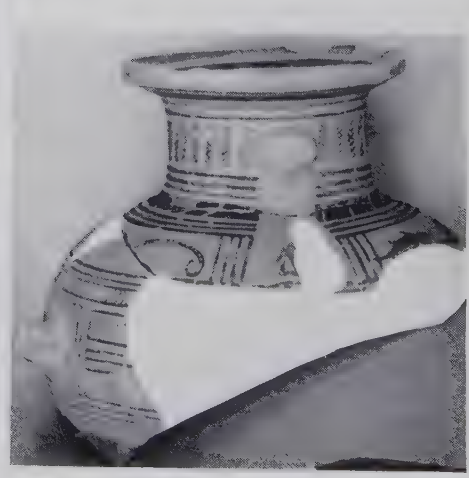

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HYDRIAI AND AMPHORA FROM AETOS, ITHACA.

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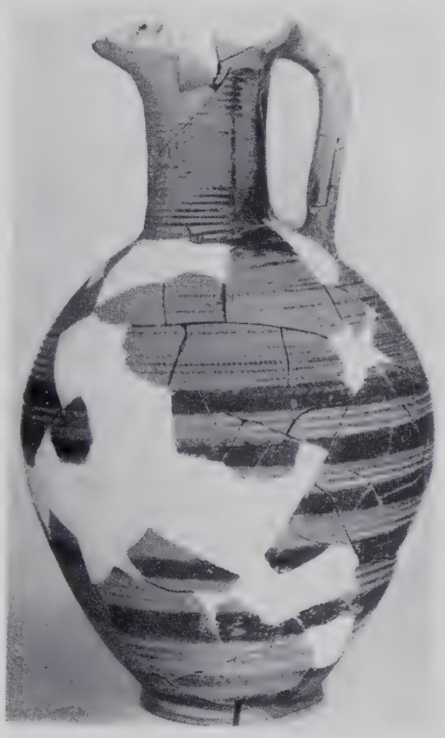

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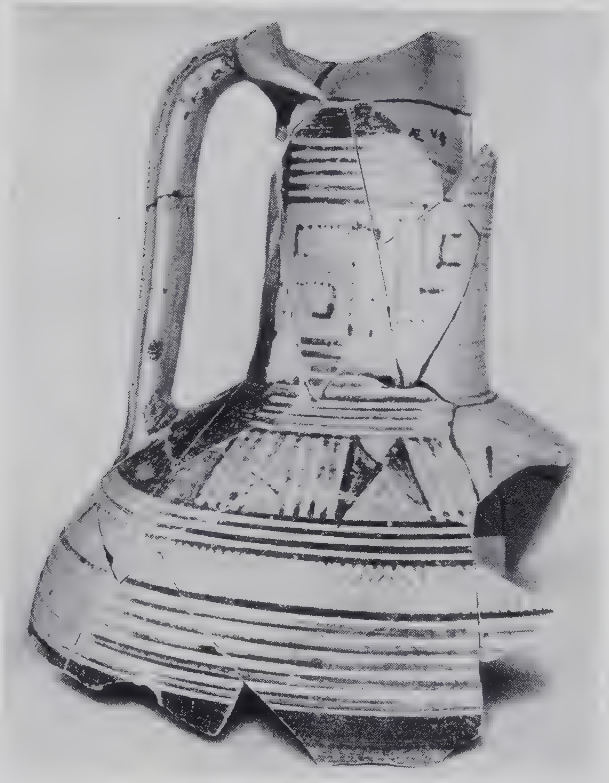

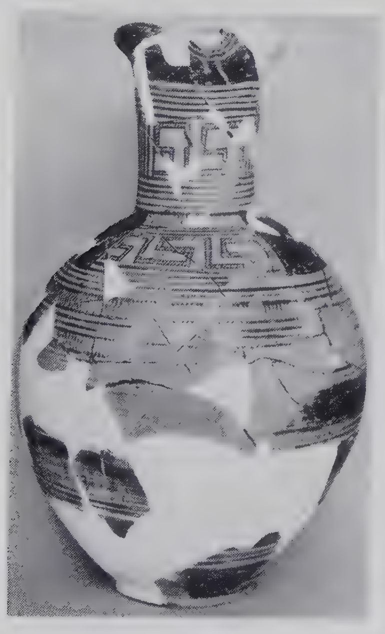

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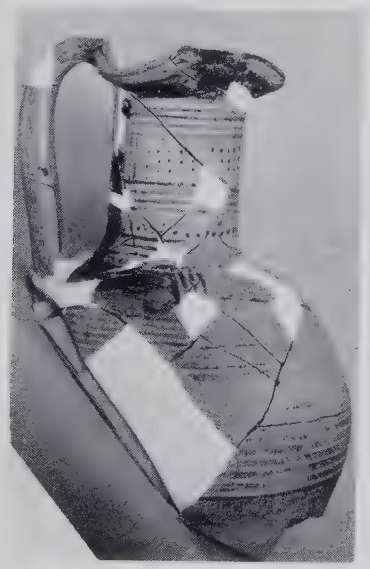

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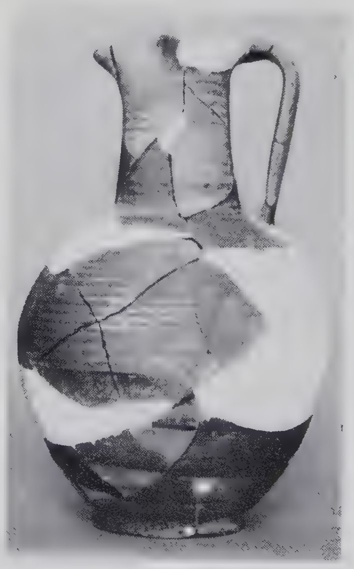

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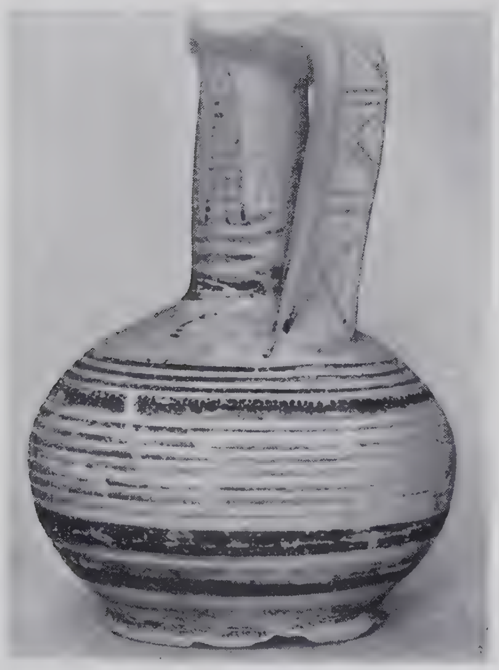
GEOMETRIC OINOCHOAI FROM AETOS, ITHACA.



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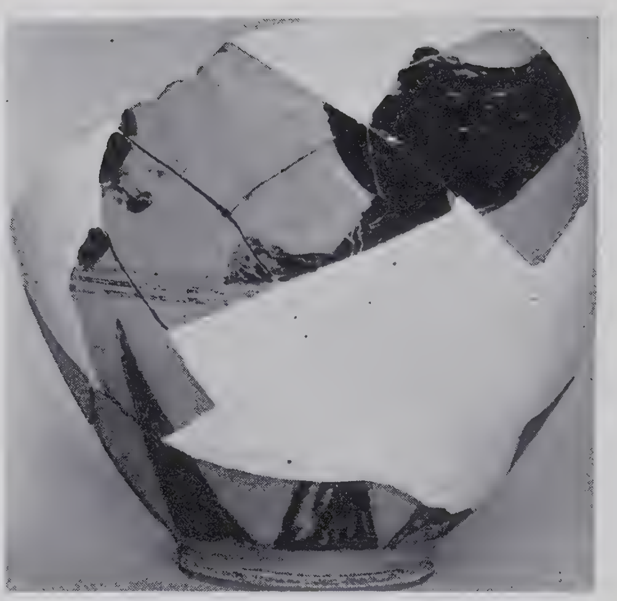

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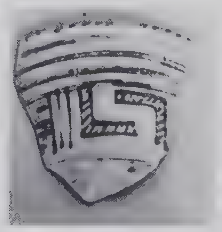

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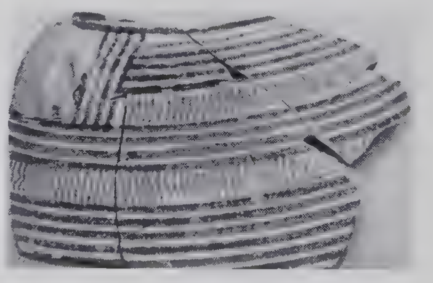

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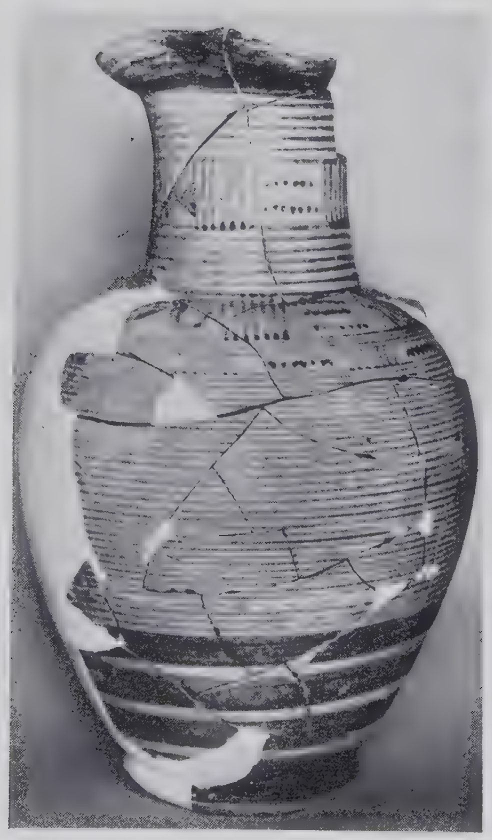

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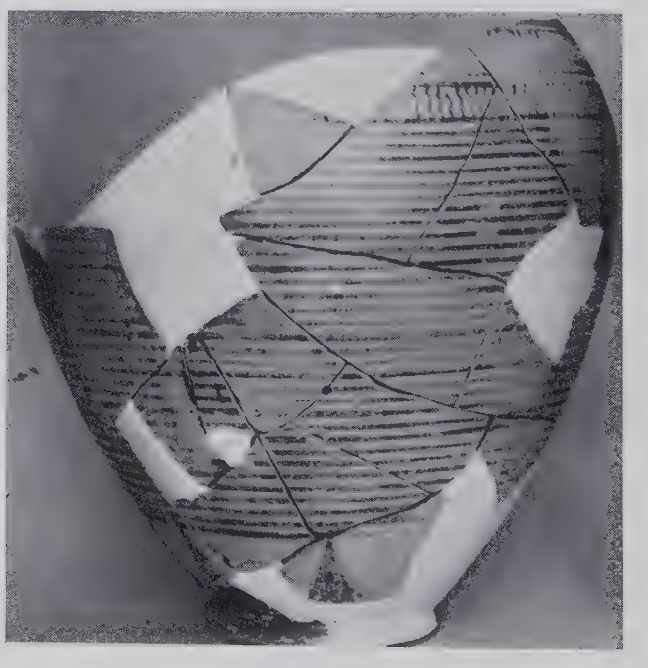

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CLOSED VASES FROM AETOS, ITHACA.

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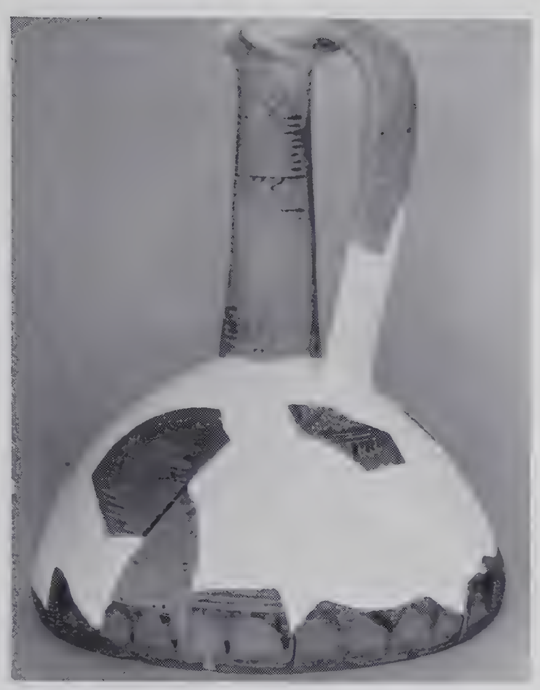

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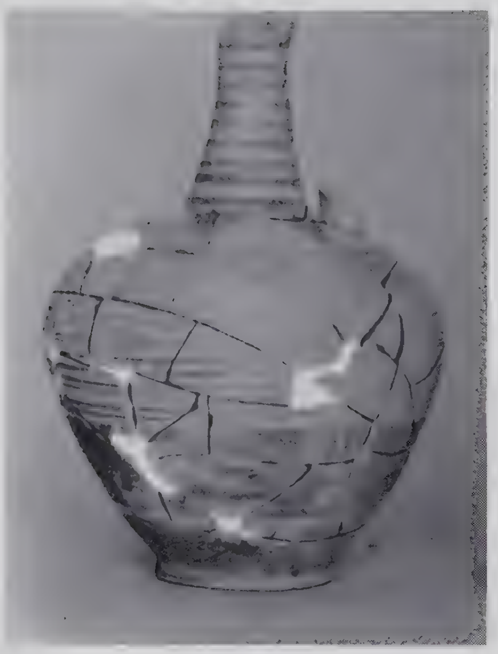

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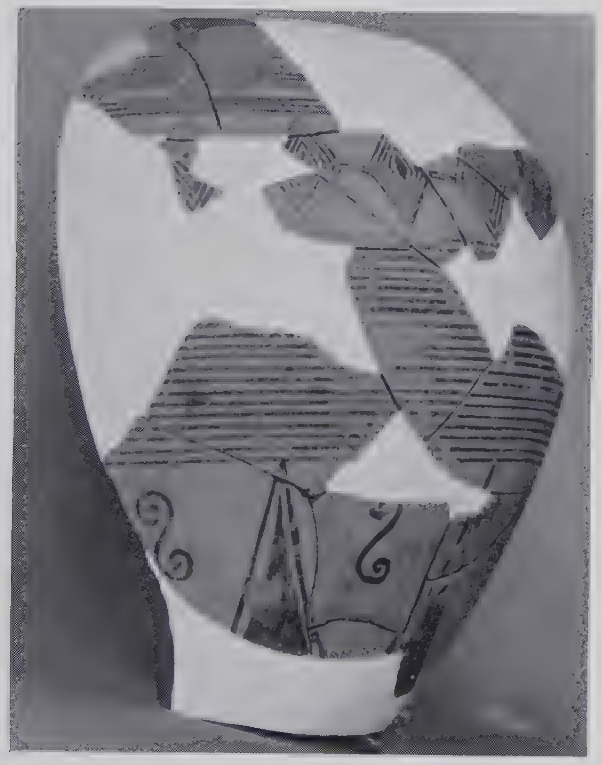

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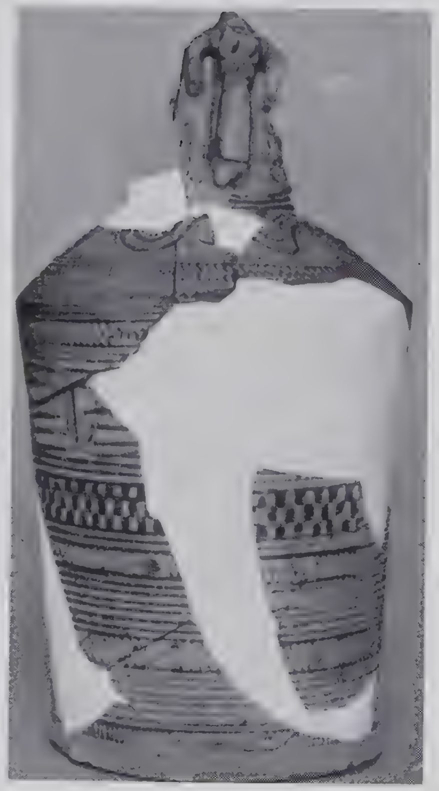

OINOCHOAI FROM AETOS, ITHACA.

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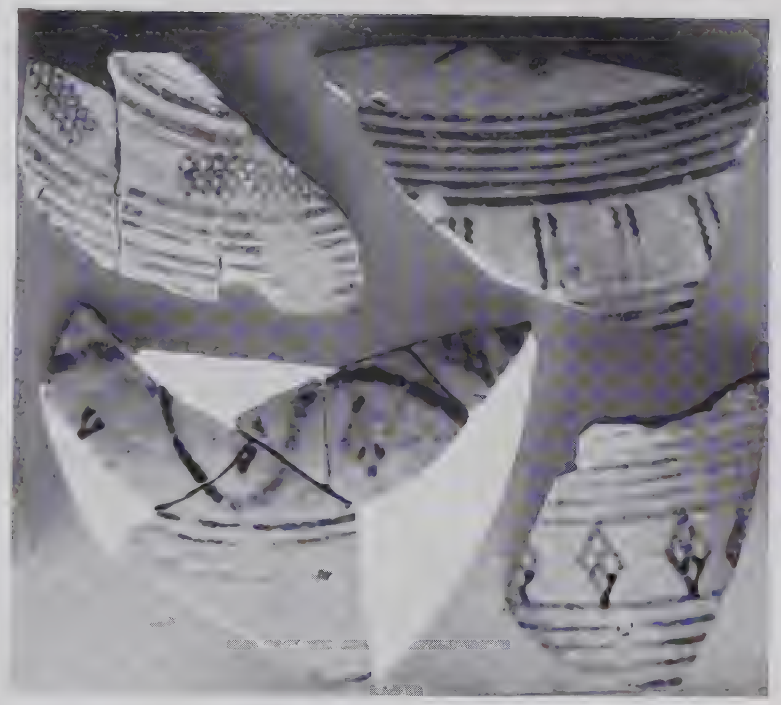

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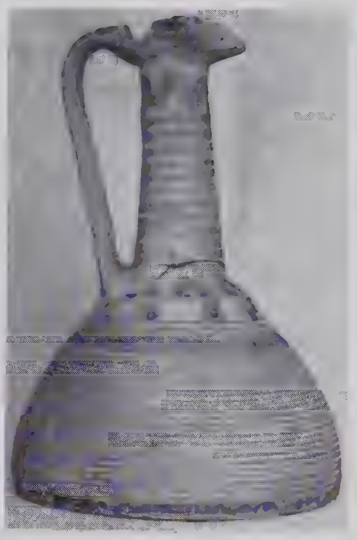

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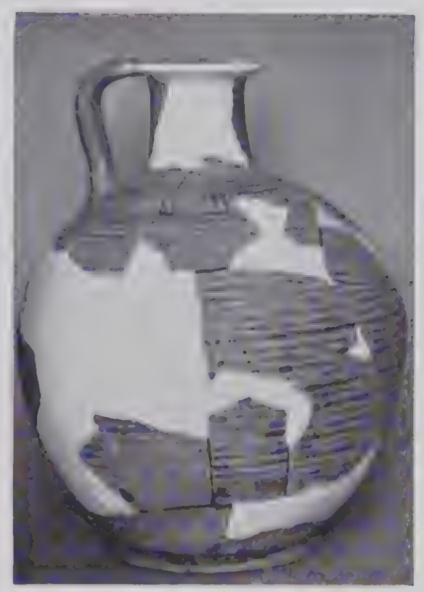

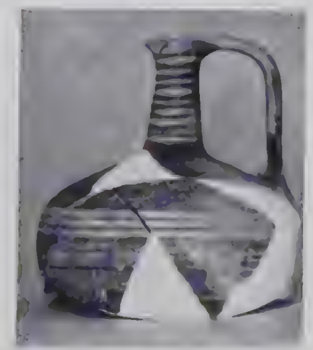

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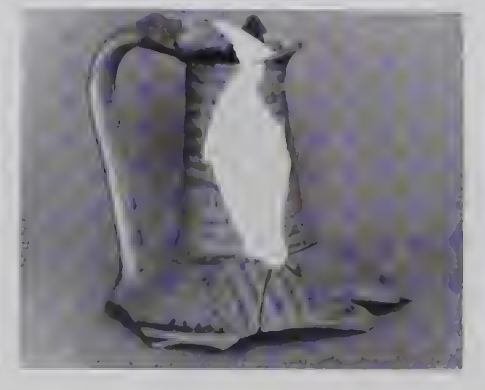

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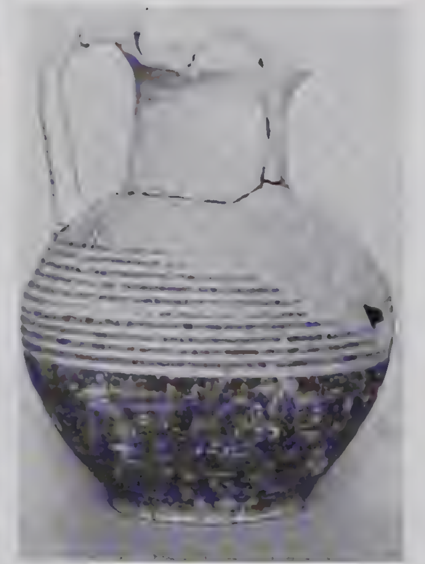

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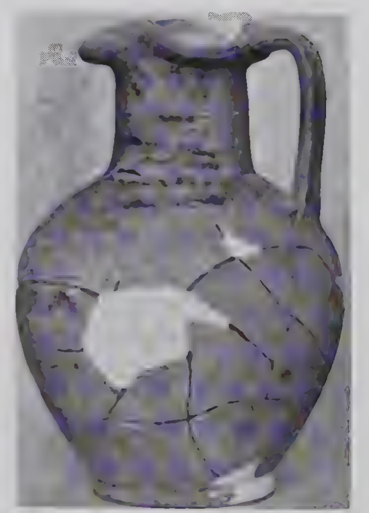

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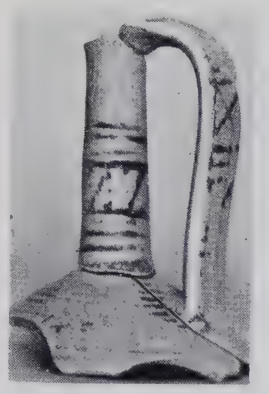

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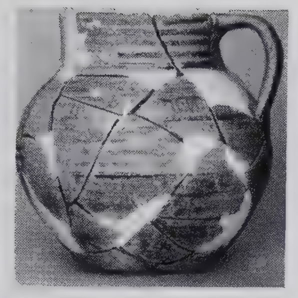

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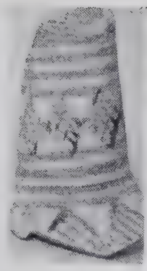

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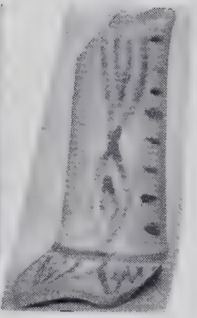

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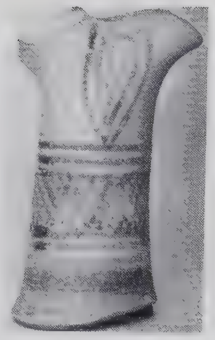

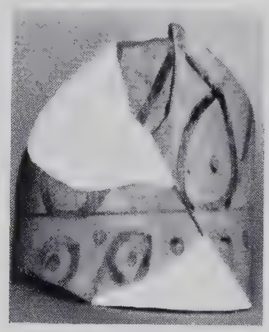

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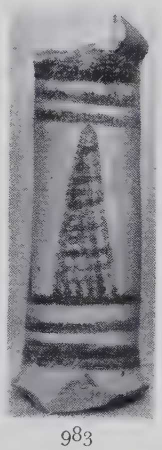

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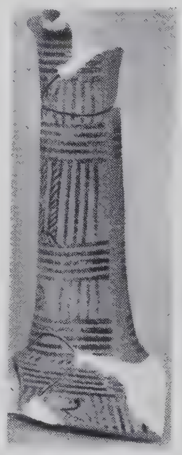

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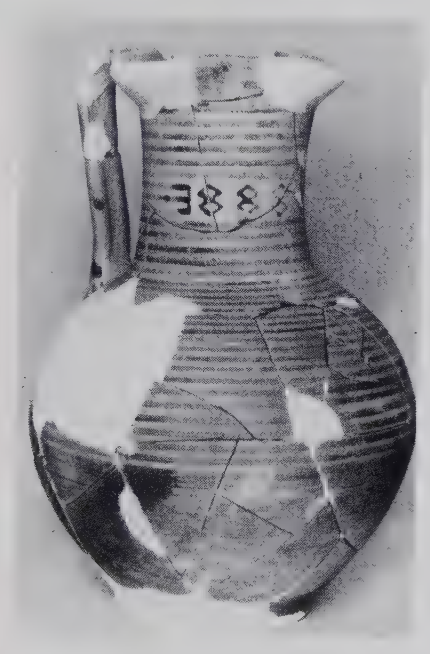

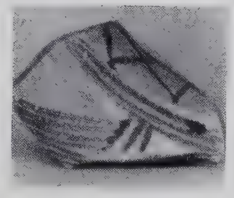

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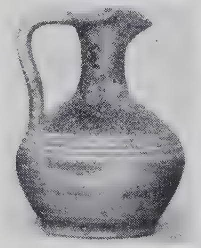

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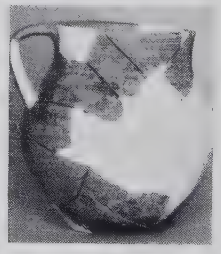

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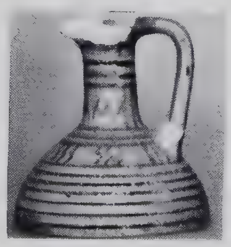

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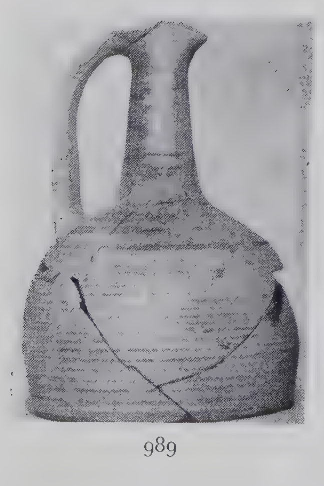

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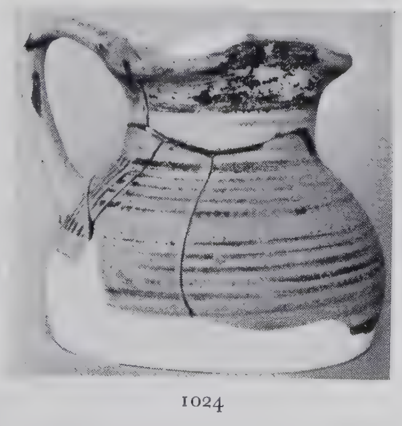

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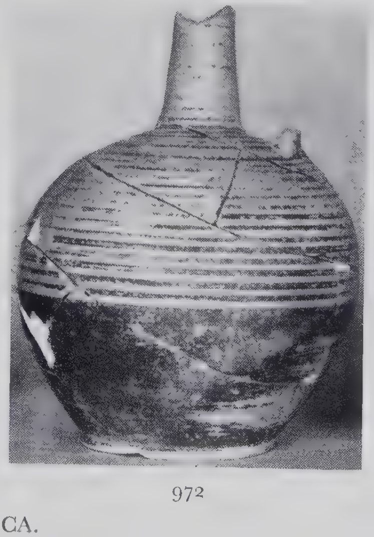
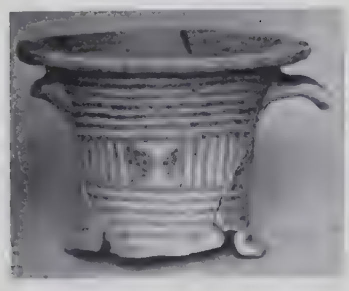


972

CLOSED VASES FROM AETOS, ITHACA.



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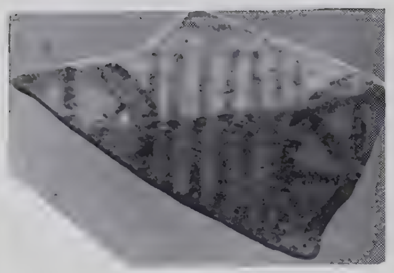

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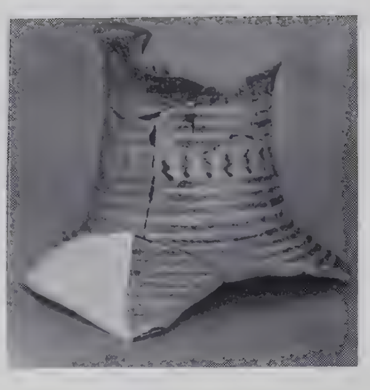

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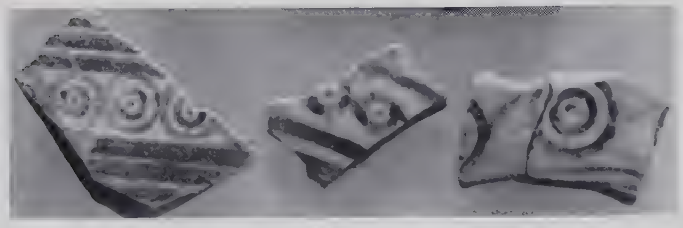
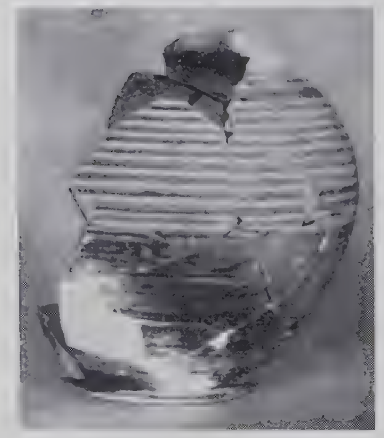


889

887

888



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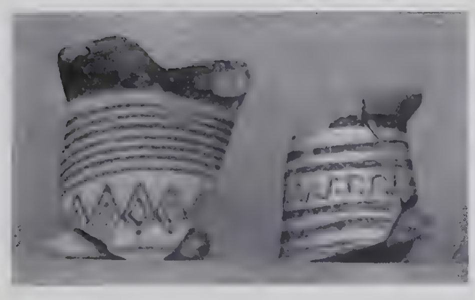

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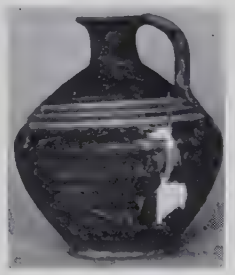

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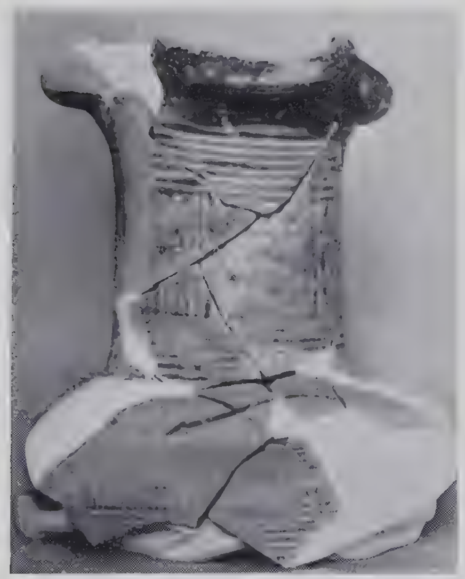

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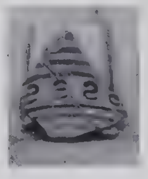

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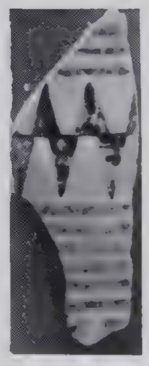

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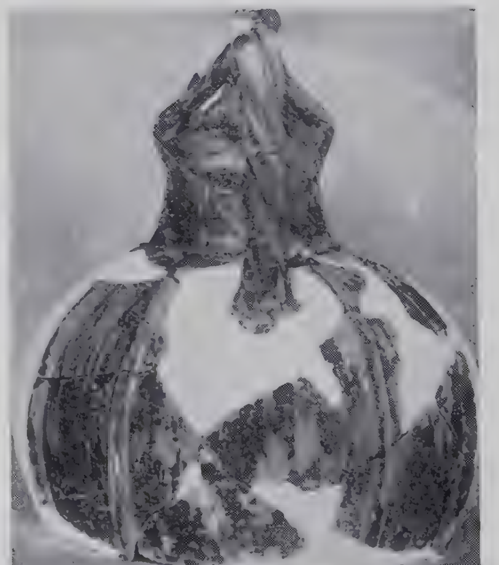
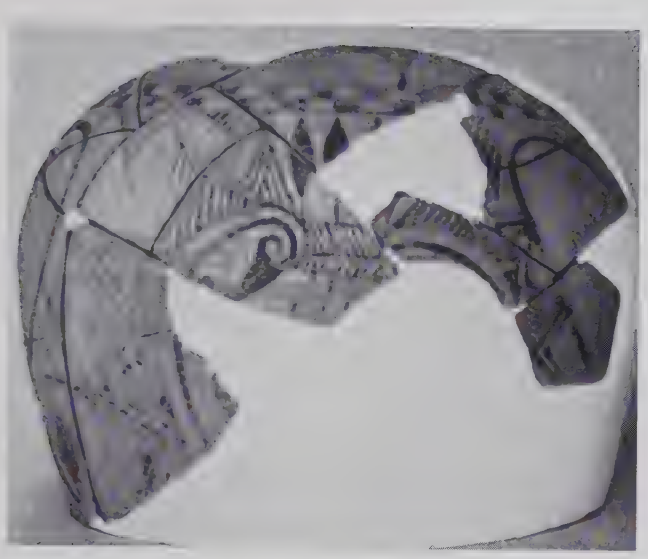


P.143

CLOSED VASES FROM AETOS, ITHACA.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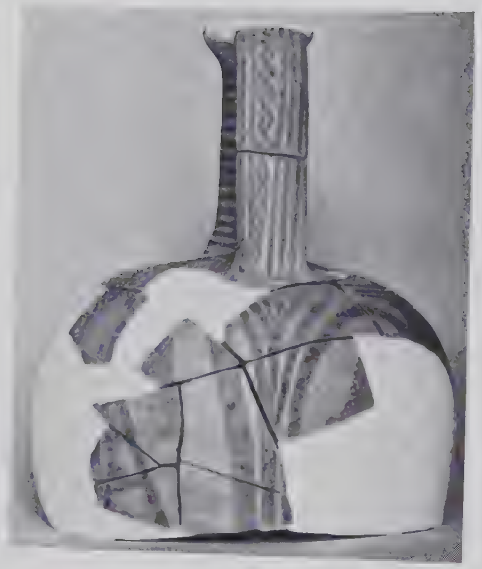
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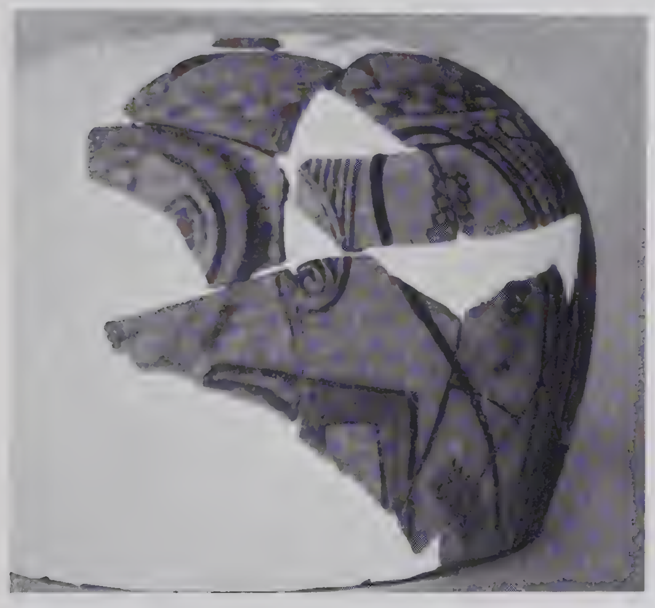
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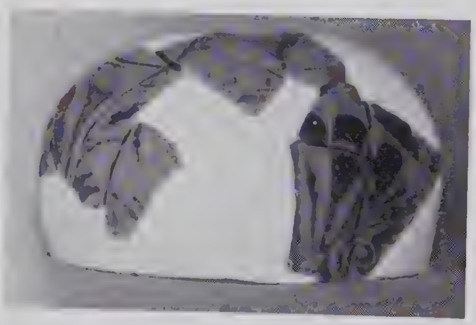
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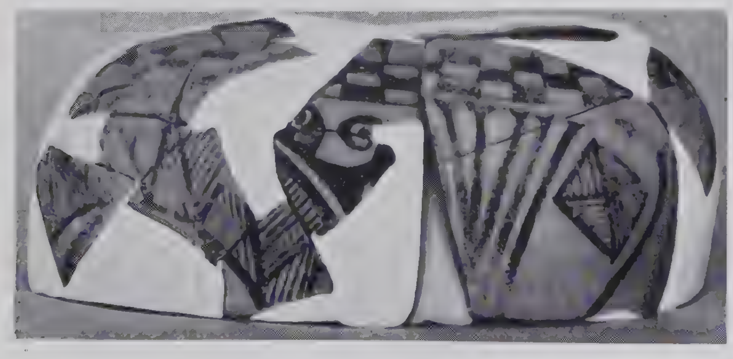
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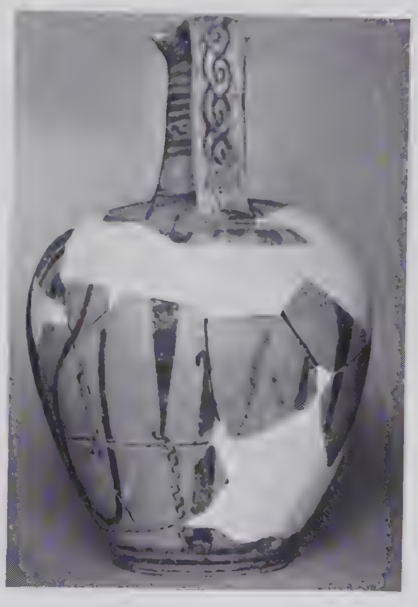
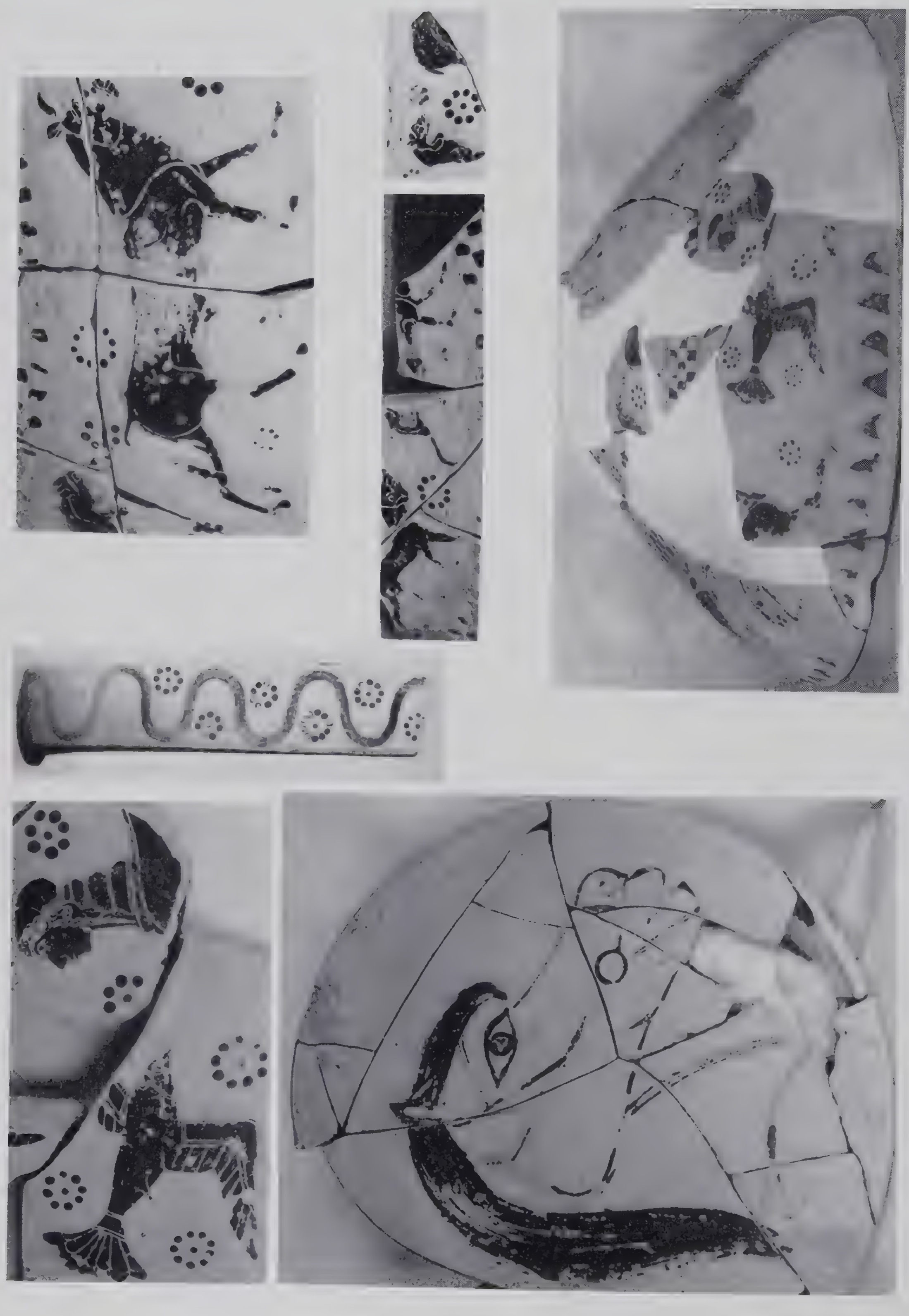
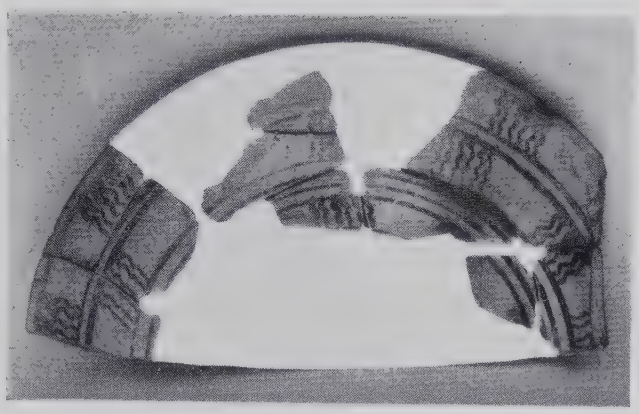

1002

LOCAL TALL-NECKED OINOCHOAI FROM AETOS, ITHACA.



CONICAL OINOCHOE 1023. FROM AETOS, ITHACA.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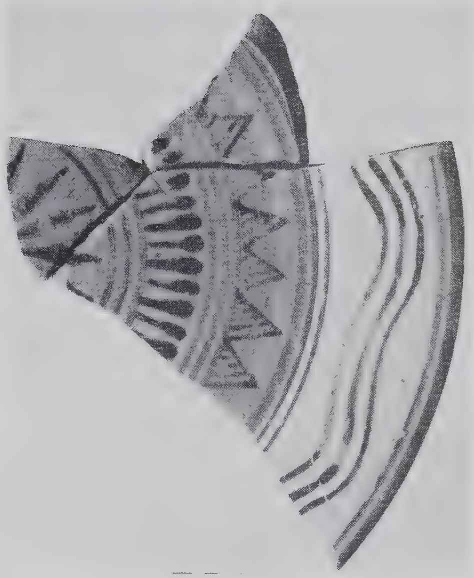
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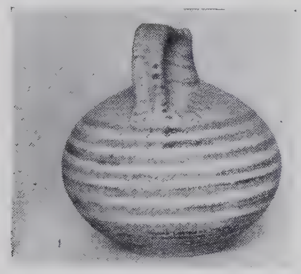
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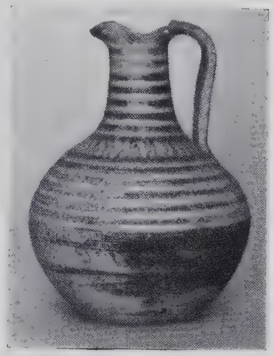
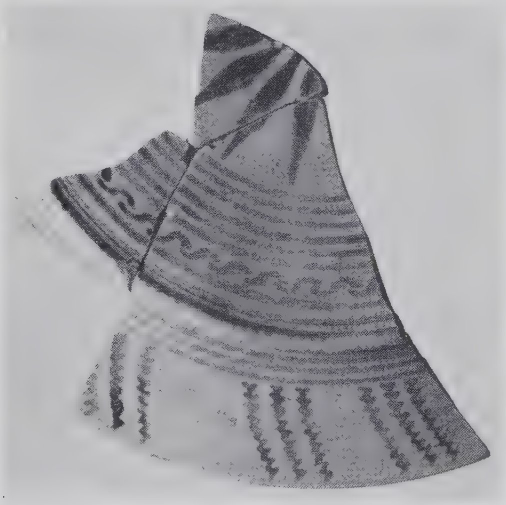

971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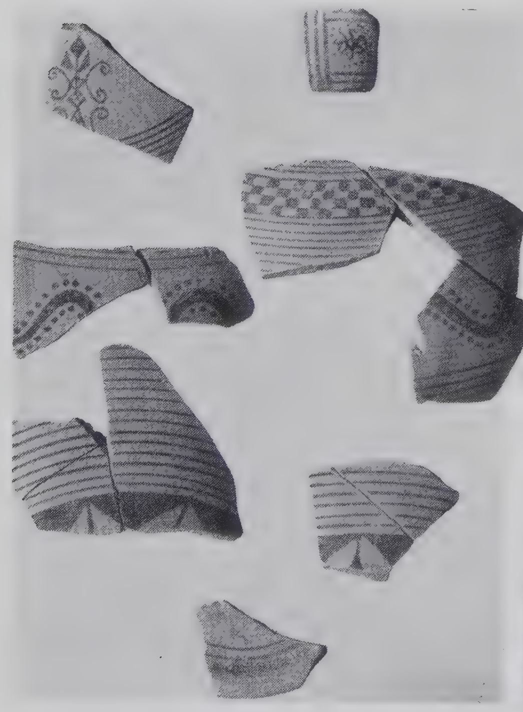
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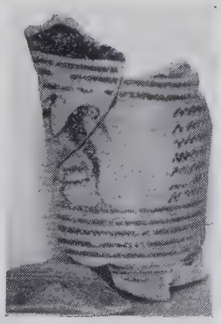
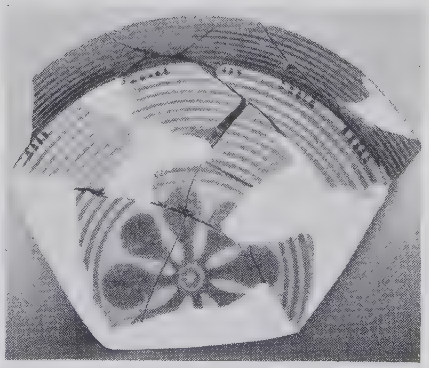
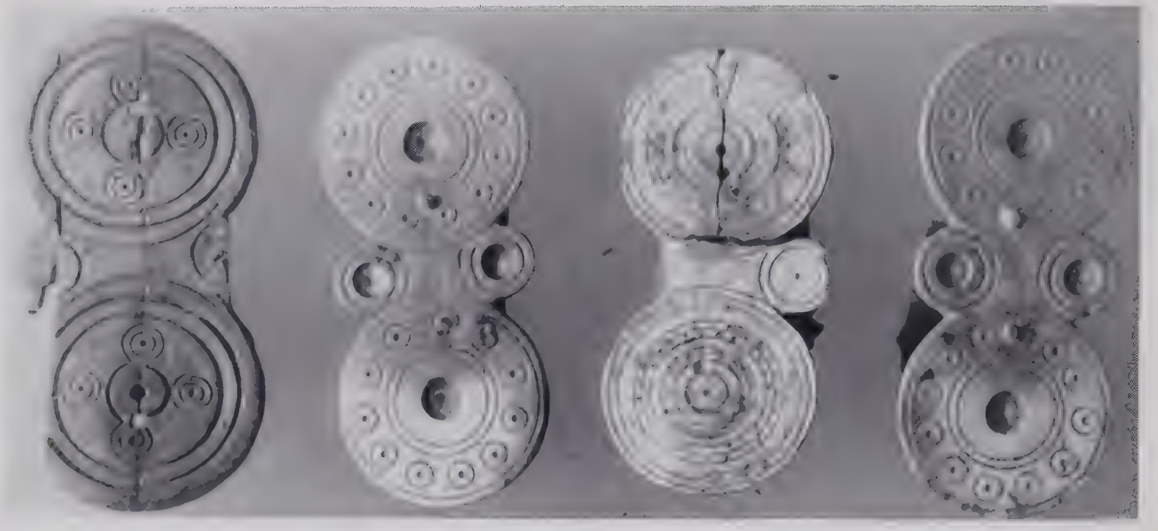
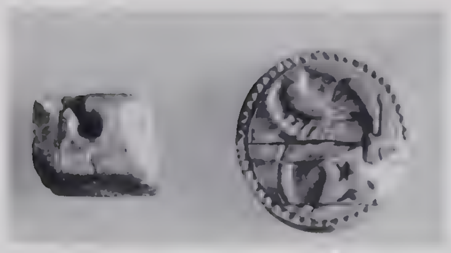

963


1061

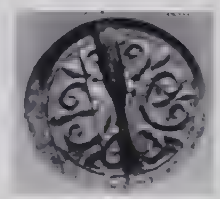
PLATES, ETC., FROM AETOS, ITHACA.

C.49 C.48 C.50 C.51

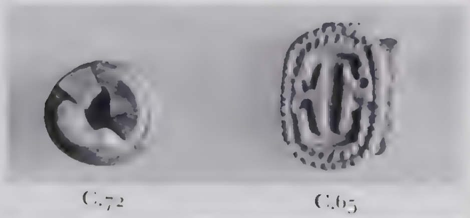




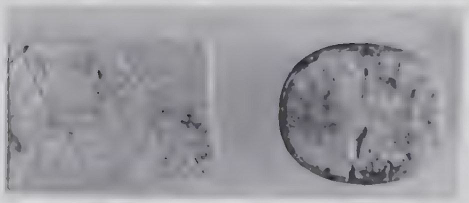
C.71*a* C.62



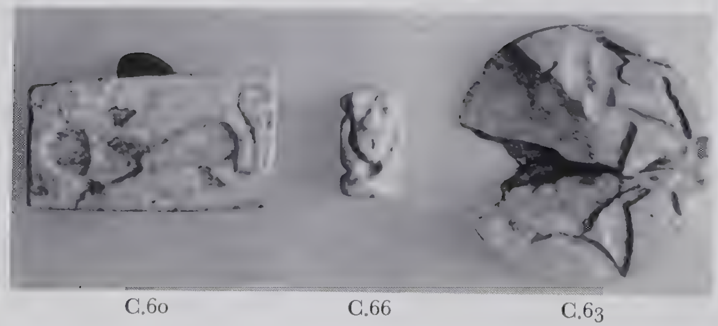
C.62



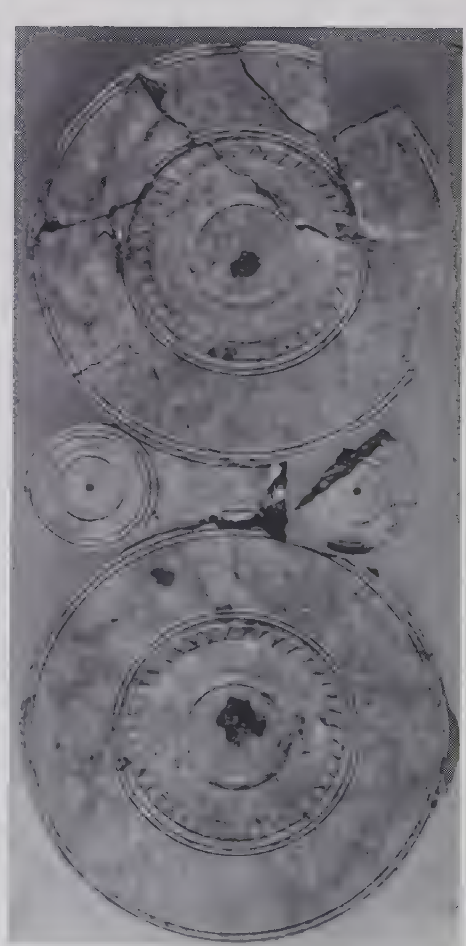
C.72 C.65



C.58 C.64



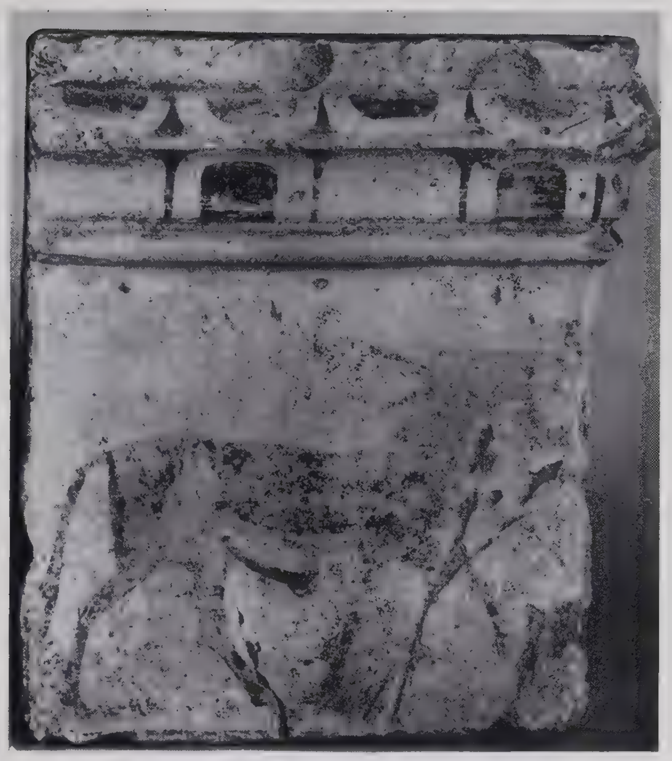
C.60 C.66 C.63



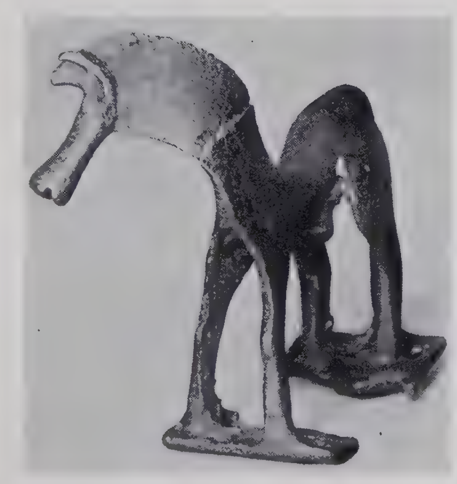
C.46

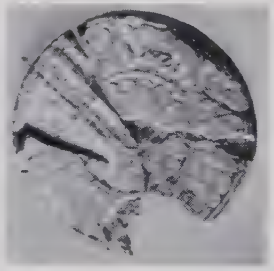
IVORY AND BONE FROM AETOS, ITHACA.

C.52



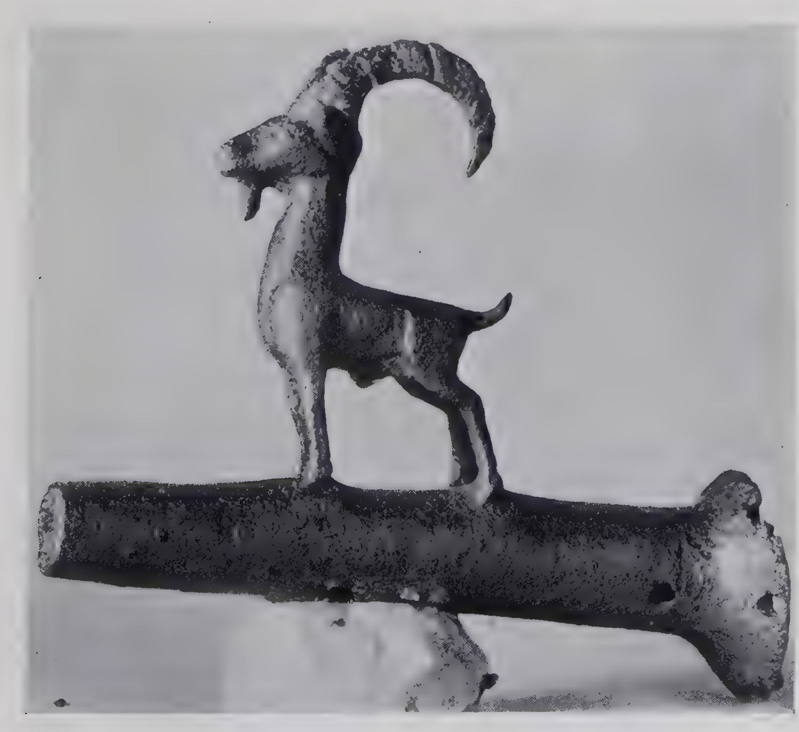
E.195

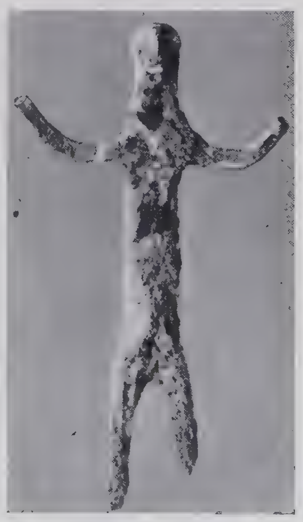




C.63

E.200

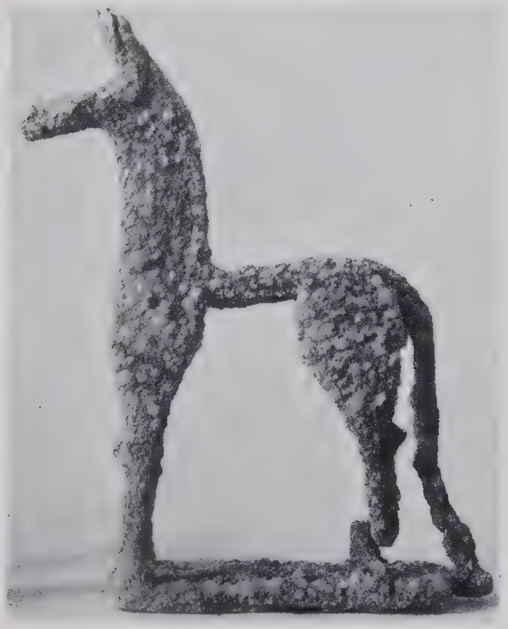




E.189

TERRACOTTA ALTAR AND SMALL FINDS FROM AETOS, ITHACA.

E.193



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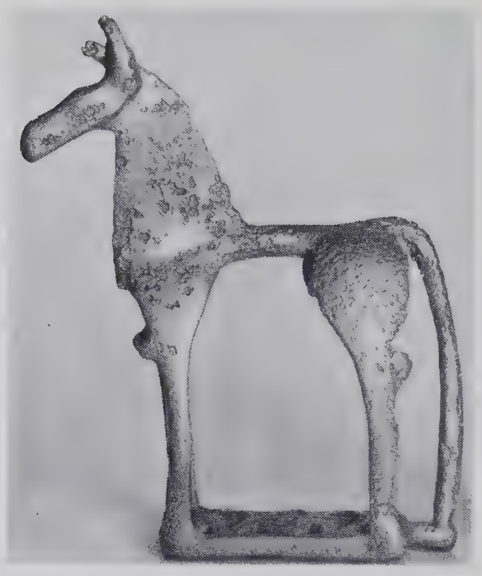

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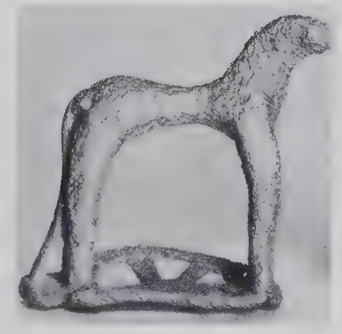

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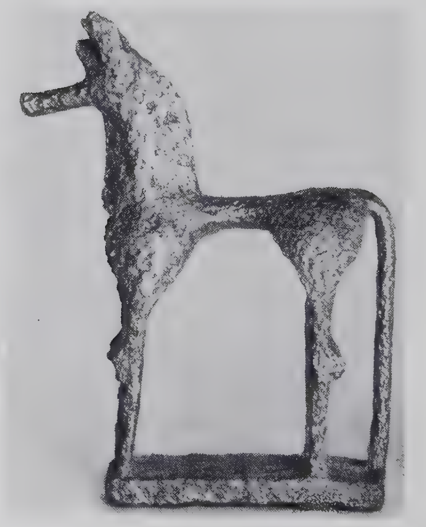
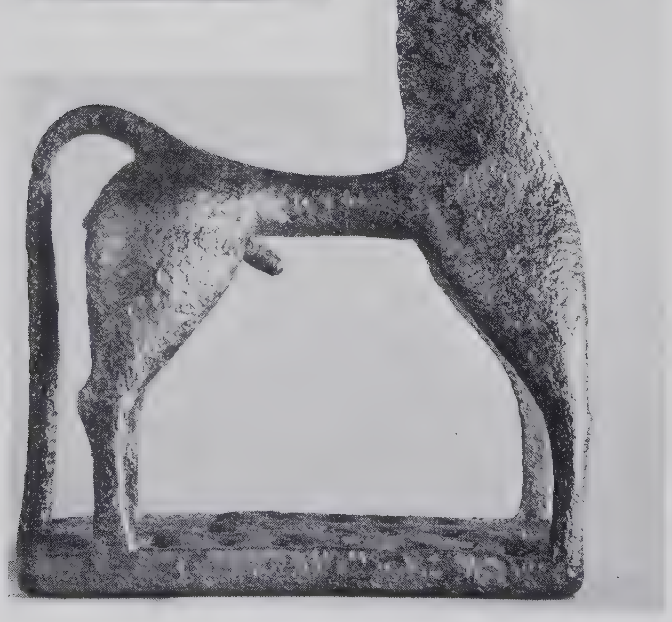
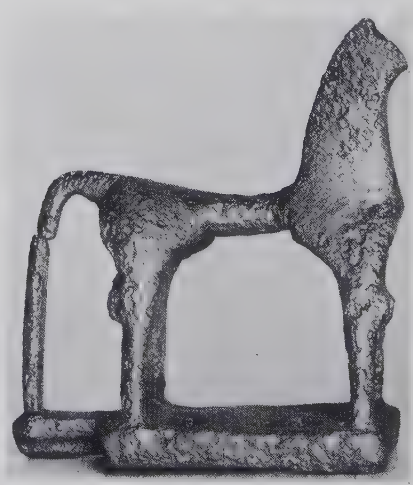


E.196

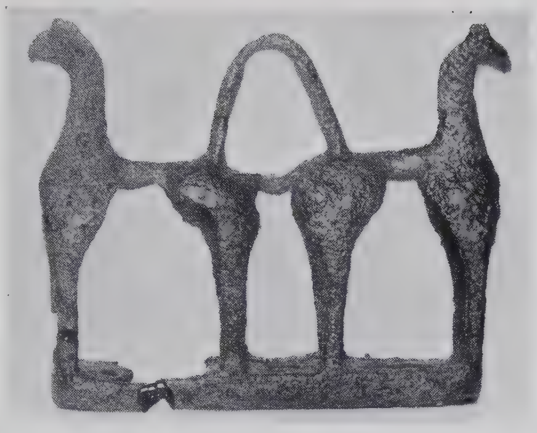


E.191

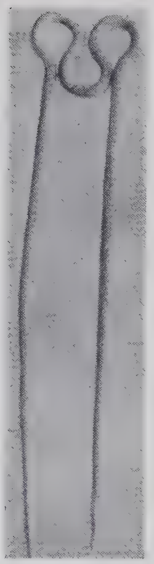


BRONZE HORSES FROM AETOS, ITHACA.

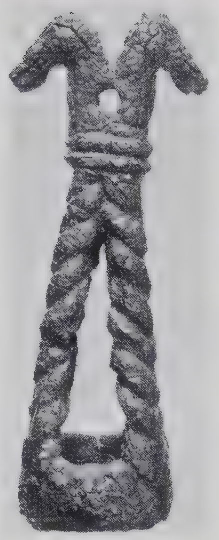
E.198



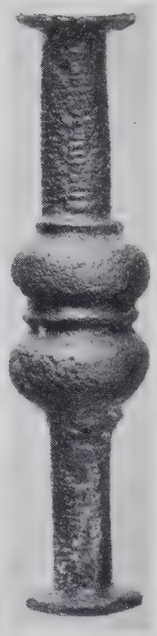
E.215



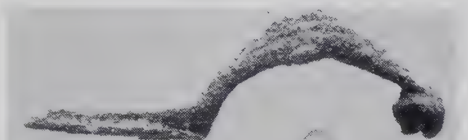
E.199



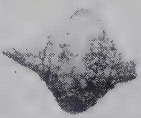
E.249



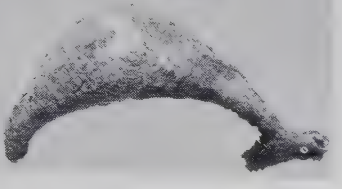
E.226



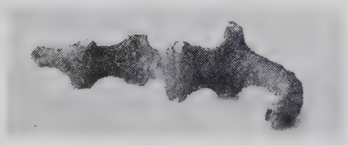
E.227

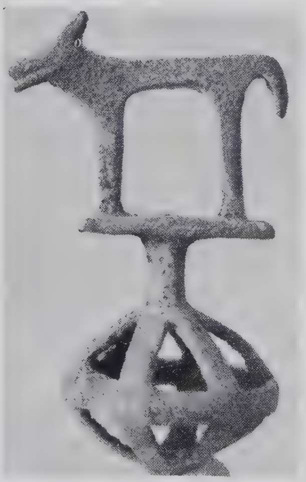


E.225

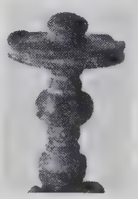


E.228

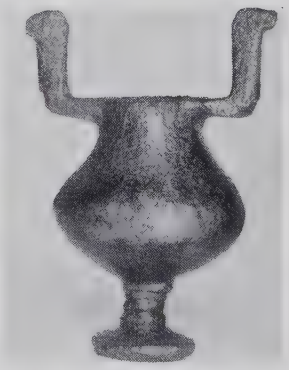




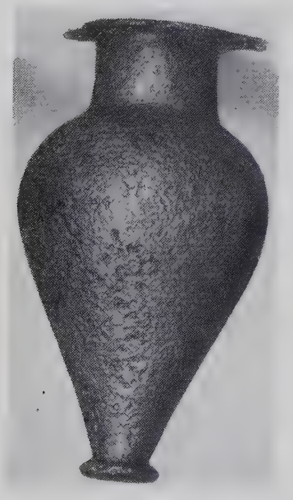
E.197



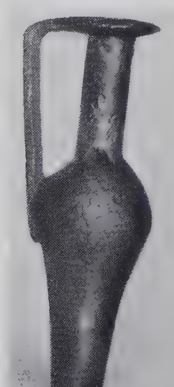
E.214



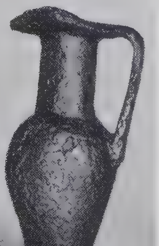
E.208



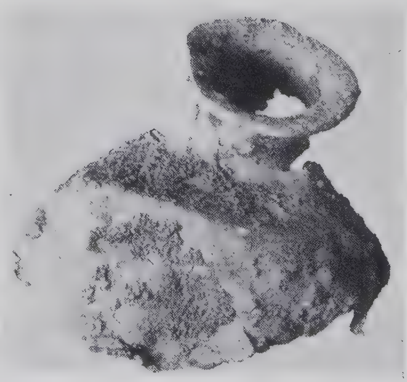
E.207



E.206

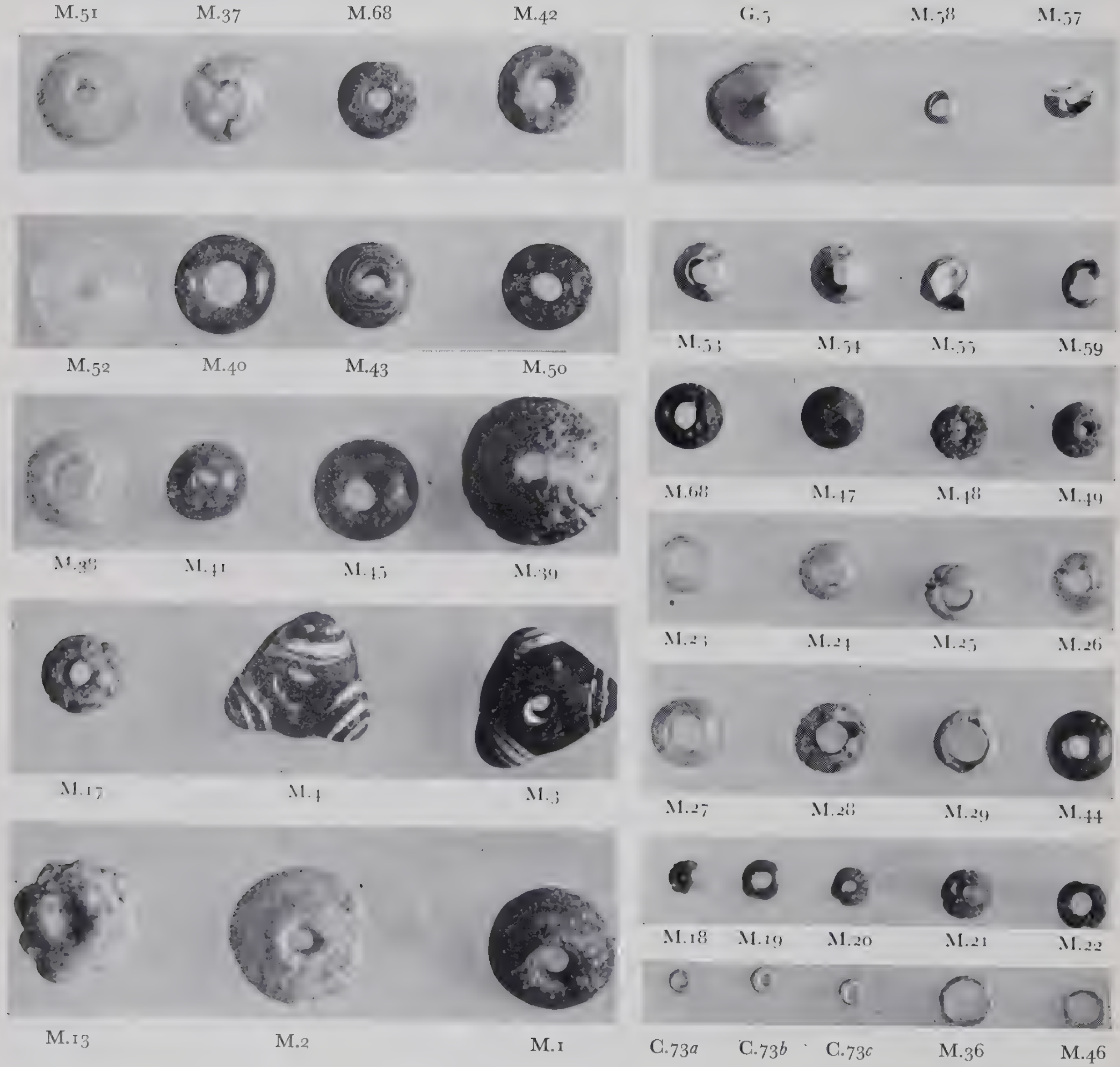


E.205

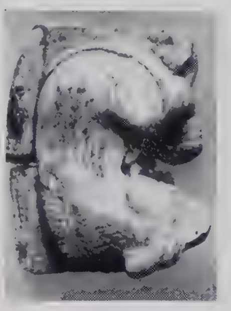


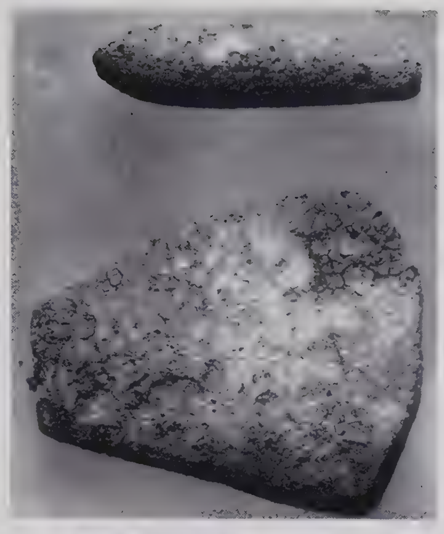
E.203

BRONZES FROM AETOS, ITHACA.

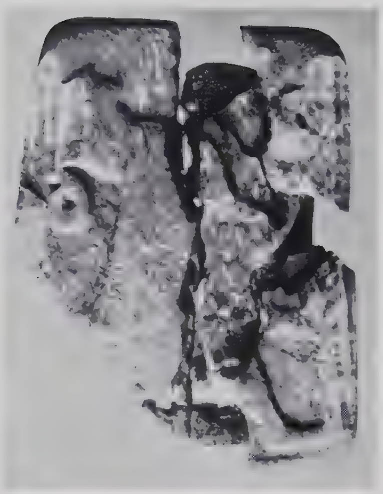

M.51
M.37
M.68
M.42
G.5
M.58
M.57
M.52
M.40
M.43
M.50
M.53
M.54
M.55
M.59
M.68
M.47
M.48
M.49
M.38
M.41
M.45
M.39
M.23
M.24
M.25
M.26
M.17
M.4
M.3
M.27
M.28
M.29
M.44
M.18
M.19
M.20
M.21
M.22
M.13
M.2
M.1
C.73*a*
C.73*b*
C.73*c*
M.36
M.46

BEADS FROM AETOS, ITHACA.

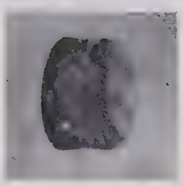

C.56


D.28

M.63


C.55

C.57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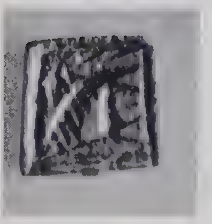
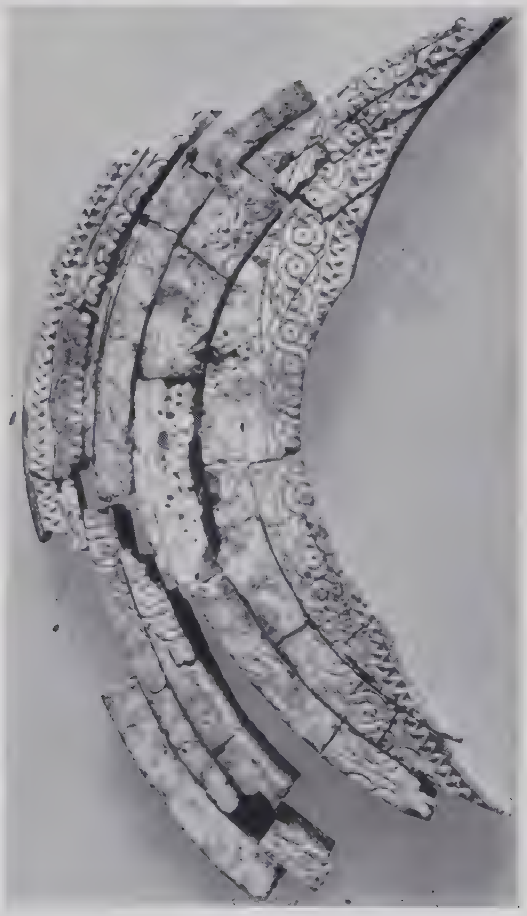

C.57

M.62

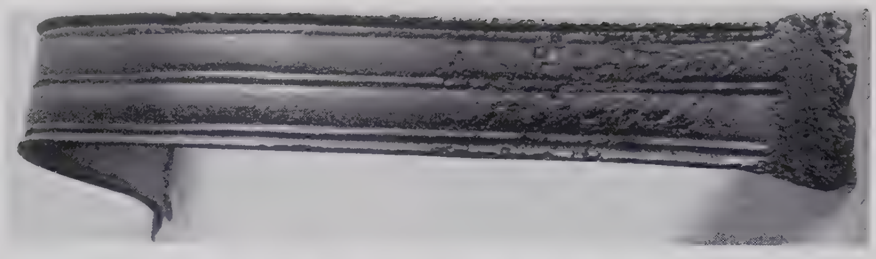
M.61

M.60

C.61


C.74

IVORIES, ETC., FROM AETOS, ITHACA.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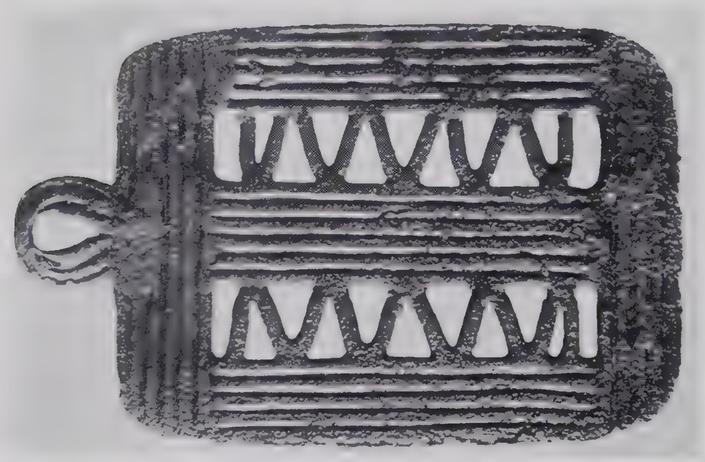
C.68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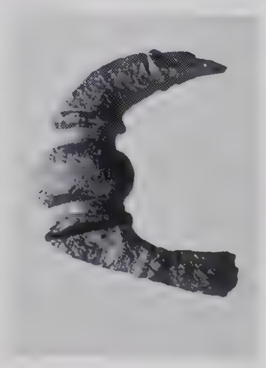
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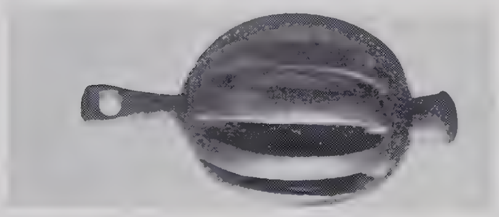
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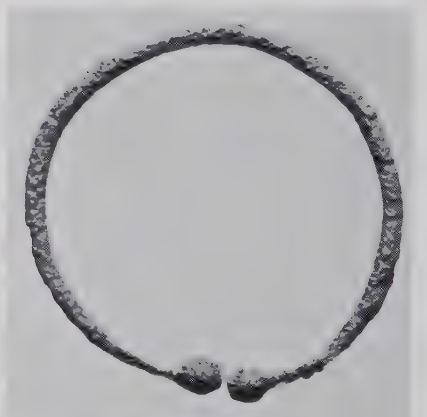
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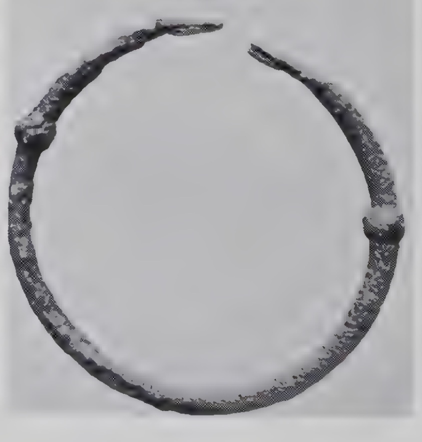
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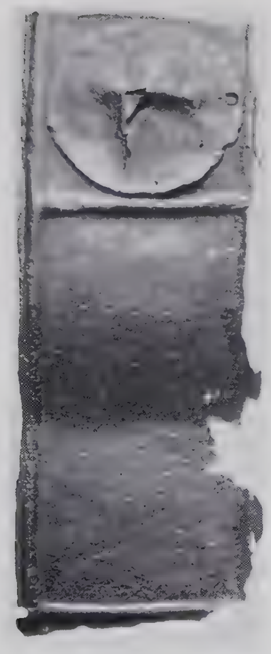
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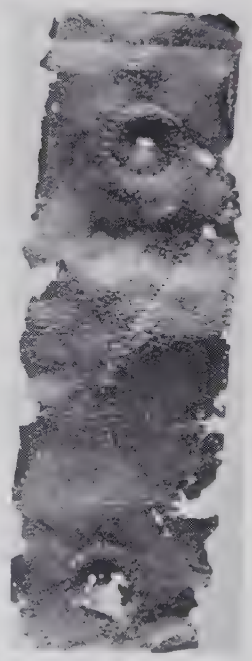
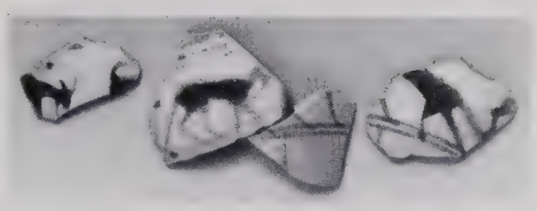
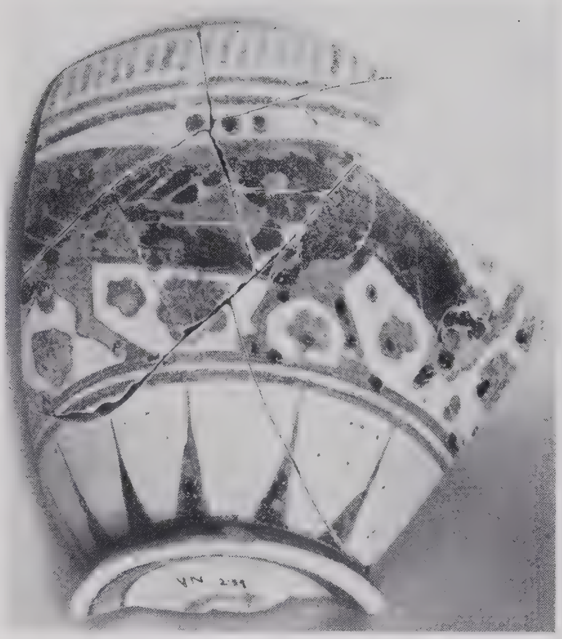

E.243a

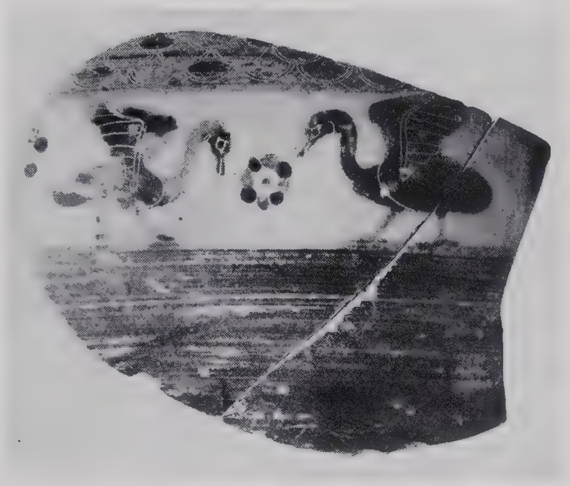
BRONZES FROM AETOS, ITHACA.



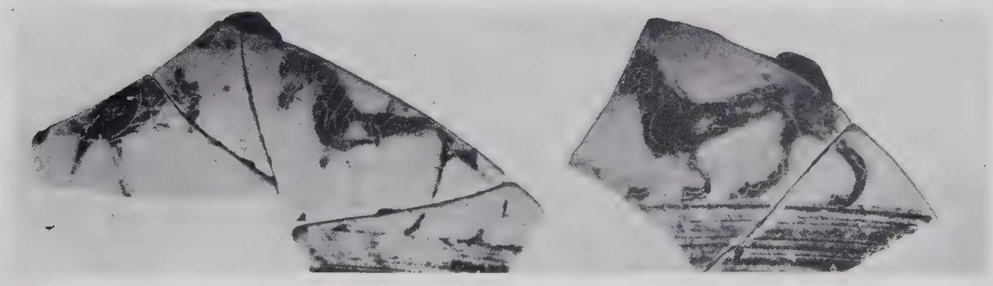
K.1



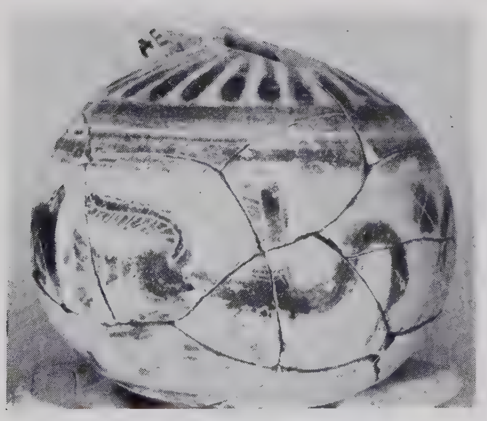
K.2



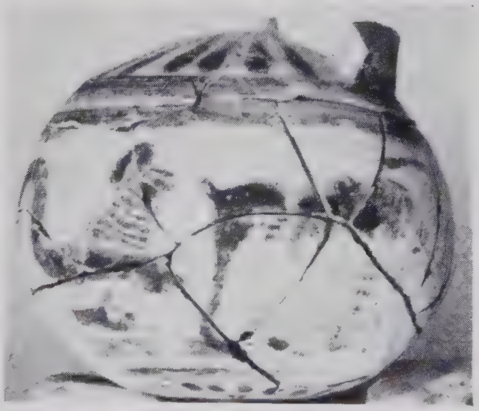
K.12



K.10



K.18



K.18

'CORINTHIAN' POTTERY FROM AETOS, ITHACA.

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